

SEQUENCE LISTING

<110> Reed, John C.
Pio, Frederick F.
Godzik, Adam
Stehlik, Christian
Damiano, Jason S.
Lee, Sug-Hyung
Oliveira, Vasco A.
Hayashi, Hideki
Pawlowski, Krzysztof

<120> Card3X-2 Polypeptides, Encoding Nucleic
Acids, and Methods of Use

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<150> US 09/579,240
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| Met | Ala | Thr | Glu | Ser | Thr | Pro | Ser | Glu | Ile | Ile | Glu | Arg | Glu | Arg | Lys | |
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| aag | ttg | ctt | gaa | atc | ctt | caa | cat | gat | cct | gat | tct | atc | tta | gac | acg | 96 |
| Lys | Leu | Leu | Glu | Ile | Leu | Gln | His | Asp | Pro | Asp | Ser | Ile | Leu | Asp | Thr | |
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| tta | act | tct | cgg | agg | ctg | att | tct | gag | gaa | gag | tat | gag | act | ctg | gag | 144 |
| Leu | Thr | Ser | Arg | Arg | Leu | Ile | Ser | Glu | Glu | Glu | Tyr | Glu | Thr | Leu | Glu | |
| | | | 35 | | | | 40 | | | | | 45 | | | | |

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| aat gtt aca gat ctc ctg aag aaa agt cgg aag ctg tta att ttg gta | 192 |
| Asn Val Thr Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val | |
| 50 55 60 | |
| cag aaa aag gga gag gcg acc tgt cag cat ttt ctc aag tgt tta ttt | 240 |
| Gln Lys Lys Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys Leu Phe | |
| 65 70 75 80 | |
| agt act ttt cca cag tca gct gcc att tgc ggc tta agg cat gaa gtt | 288 |
| Ser Thr Phe Pro Gln Ser Ala Ala Ile Cys Gly Leu Arg His Glu Val | |
| 85 90 95 | |
| tta aaa cat gag aat aca gta cct cct caa tct atg ggg gca agc agt | 336 |
| Leu Lys His Glu Asn Thr Val Pro Pro Gln Ser Met Gly Ala Ser Ser | |
| 100 105 110 | |
| aat tca gaa gat gct ttt tct cct gga ata aaa cag cct gaa gcc cct | 384 |
| Asn Ser Glu Asp Ala Phe Ser Pro Gly Ile Lys Gln Pro Glu Ala Pro | |
| 115 120 125 | |
| gag atc aca gtg ttc ttc agt gag aag gaa cac ttg gat ttg gaa acc | 432 |
| Glu Ile Thr Val Phe Phe Ser Glu Lys Glu His Leu Asp Leu Glu Thr | |
| 130 135 140 | |
| tct gag ttt ttc agg gac aag aaa act agt tat agg gaa aca gct ttg | 480 |
| Ser Glu Phe Phe Arg Asp Lys Lys Thr Ser Tyr Arg Glu Thr Ala Leu | |
| 145 150 155 160 | |
| tct gcc agg aag aat gag aag gaa tat gac aca cca gaa gtc aca tta | 528 |
| Ser Ala Arg Lys Asn Glu Lys Glu Tyr Asp Thr Pro Glu Val Thr Leu | |
| 165 170 175 | |
| tca tat tca gtt gag aaa gtt gga tgt gaa gtt cca gca act att aca | 576 |
| Ser Tyr Ser Val Glu Lys Val Gly Cys Glu Val Pro Ala Thr Ile Thr | |
| 180 185 190 | |
| tat ata aaa gat gga cag aga tat gag gag cta gat gat tct tta tac | 624 |
| Tyr Ile Lys Asp Gly Gln Arg Tyr Glu Glu Leu Asp Asp Ser Leu Tyr | |
| 195 200 205 | |
| tta gga aaa gag gaa tat cta gga tct gtt gac acc cct gaa gat gca | 672 |
| Leu Gly Lys Glu Glu Tyr Leu Gly Ser Val Asp Thr Pro Glu Asp Ala | |
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| gaa gcc act gtg gaa gag gag gtt tat gat gac cca gag cac gtt gga | 720 |
| Glu Ala Thr Val Glu Glu Glu Val Tyr Asp Asp Pro Glu His Val Gly | |
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| tat gat ggt gaa gag gac ttc gag aat tca gaa acc aca gag ttc tct | 768 |
| Tyr Asp Gly Glu Glu Asp Phe Glu Asn Ser Glu Thr Thr Glu Phe Ser | |
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Gly Glu Glu Pro Ser Tyr Glu Gly Ser Glu Thr Ser Leu Ser Leu Glu
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Glu Glu Gln Glu Lys Ser Ile Glu Gly Trp Ser Arg Thr His Gly Leu
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Lys Arg Ser Ser His Val Gly Leu Pro Lys Cys Trp Asp Tyr Arg Arg
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Asn Val Thr Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val
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Gln Lys Lys Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys Leu Phe
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Ser Thr Phe Pro Gln Ser Ala Ala Ile Cys Gly Leu Arg His Glu Val
85 90 95
Leu Lys His Glu Asn Thr Val Pro Pro Gln Ser Met Gly Ala Ser Ser
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Asn Ser Glu Asp Ala Phe Ser Pro Gly Ile Lys Gln Pro Glu Ala Pro
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Glu Ile Thr Val Phe Phe Ser Glu Lys Glu His Leu Asp Leu Glu Thr
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Ser Glu Phe Phe Arg Asp Lys Lys Thr Ser Tyr Arg Glu Thr Ala Leu
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Ser Ala Arg Lys Asn Glu Lys Glu Tyr Asp Thr Pro Glu Val Thr Leu
165 170 175
Ser Tyr Ser Val Glu Lys Val Gly Cys Glu Val Pro Ala Thr Ile Thr
180 185 190
Tyr Ile Lys Asp Gly Gln Arg Tyr Glu Glu Leu Asp Asp Ser Leu Tyr
195 200 205
Leu Gly Lys Glu Glu Tyr Leu Gly Ser Val Asp Thr Pro Glu Asp Ala
210 215 220

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| Glu | Ala | Thr | Val | Glu | Glu | Glu | Val | Tyr | Asp | Asp | Pro | Glu | His | Val | Gly |
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| Tyr | Asp | Gly | Glu | Glu | Asp | Phe | Glu | Asn | Ser | Glu | Thr | Thr | Glu | Phe | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Glu | Glu | Pro | Ser | Tyr | Glu | Gly | Ser | Glu | Thr | Ser | Leu | Ser | Leu | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Glu | Glu | Gln | Glu | Lys | Ser | Ile | Glu | Gly | Trp | Ser | Arg | Thr | His | Gly | Leu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Lys | Arg | Ser | Ser | His | Val | Gly | Leu | Pro | Lys | Cys | Trp | Asp | Tyr | Arg | Arg |
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gtc gag ctg ctg gtc tca ggg tcc ctg gaa ggc ttc gag agt gtc ctg 96
Val Glu Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu
20 25 30

gac tgg ctg ctg tcc tgg gag gtc ctc tcc tgg gag gac tac gag ggc 144
Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly
35 40 45

ttc cac ctc ctg ggc cag cct ctc tcc cac ttg gcc agg cgc ctt ctg 192

| | | | | | | | | | | | | | | | | | |
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| Phe | His | Leu | Leu | Gly | Gln | Pro | Leu | Ser | His | Leu | Ala | Arg | Arg | Leu | Leu | | |
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| gac | acc | gtc | tgg | aat | aag | ggt | act | tgg | gcc | tgt | cag | aag | ctc | atc | gcg | 240 | |
| Asp | Thr | Val | Trp | Asn | Lys | Gly | Thr | Trp | Ala | Cys | Gln | Lys | Leu | Ile | Ala | | |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | | | |
| gct | gcc | caa | gaa | gcc | cag | gcc | gac | agc | cag | tcc | ccc | aag | ctg | cat | ggc | 288 | |
| Ala | Ala | Gln | Glu | Ala | Gln | Ala | Asp | Ser | Gln | Ser | Pro | Lys | Leu | His | Gly | | |
| | | | | 85 | | | | 90 | | | | | | 95 | | | |
| tgc | tgg | gac | ccc | cac | tcg | ctc | cac | cca | gcc | cga | gac | ctg | cag | agt | cac | 336 | |
| Cys | Trp | Asp | Pro | His | Ser | Leu | His | Pro | Ala | Arg | Asp | Leu | Gln | Ser | His | | |
| | | | 100 | | | | | 105 | | | | | | 110 | | | |
| cgg | cca | gcc | att | gtc | agg | agg | ctc | cac | agc | cat | gtg | gag | aac | atg | ctg | 384 | |
| Arg | Pro | Ala | Ile | Val | Arg | Arg | Leu | His | Ser | His | Val | Glu | Asn | Met | Leu | | |
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| gac | ctg | gca | tgg | gag | cgg | ggt | ttc | gtc | agc | cag | tat | gaa | tgt | gat | gaa | 432 | |
| Asp | Leu | Ala | Trp | Glu | Arg | Gly | Phe | Val | Ser | Gln | Tyr | Glu | Cys | Asp | Glu | | |
| | 130 | | | | | 135 | | | | | 140 | | | | | | |
| atc | agg | ttg | ccg | atc | ttc | aca | ccg | tcc | cag | agg | gca | aga | agg | ctg | ctt | 480 | |
| Ile | Arg | Leu | Pro | Ile | Phe | Thr | Pro | Ser | Gln | Arg | Ala | Arg | Arg | Leu | Leu | | |
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| gat | ctt | gcc | acg | gtg | aaa | gcg | aat | gga | ttg | gct | gcc | ttc | ctt | cta | caa | 528 | |
| Asp | Leu | Ala | Thr | Val | Lys | Ala | Asn | Gly | Leu | Ala | Ala | Phe | Leu | Leu | Gln | | |
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| cat | gtt | cag | gaa | tta | cca | gtc | cca | ttg | gcc | ctg | cct | ttg | gaa | gct | gcc | 576 | |
| His | Val | Gln | Glu | Leu | Pro | Val | Pro | Leu | Ala | Leu | Pro | Leu | Glu | Ala | Ala | | |
| | | | 180 | | | | | 185 | | | | | | 190 | | | |
| aca | tgc | aag | aag | tat | atg | gcc | aag | ctg | agg | acc | acg | gtg | tct | gct | cag | 624 | |
| Thr | Cys | Lys | Lys | Tyr | Met | Ala | Lys | Leu | Arg | Thr | Thr | Val | Ser | Ala | Gln | | |
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| tct | cgc | ttc | ctc | agt | acc | tat | gat | gga | gca | gag | acg | ctc | tgc | ctg | gag | 672 | |
| Ser | Arg | Phe | Leu | Ser | Thr | Tyr | Asp | Gly | Ala | Glu | Thr | Leu | Cys | Leu | Glu | | |
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| gac | ata | tac | aca | gag | aat | gtc | ctg | gag | gtc | tgg | gca | gat | gtg | ggc | atg | 720 | |
| Asp | Ile | Tyr | Thr | Glu | Asn | Val | Leu | Glu | Val | Trp | Ala | Asp | Val | Gly | Met | | |
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| gct | gga | ccc | ccg | cag | aag | agc | cca | gcc | acc | ctg | ggc | ctg | gag | gag | ctc | 768 | |
| Ala | Gly | Pro | Pro | Gln | Lys | Ser | Pro | Ala | Thr | Leu | Gly | Leu | Glu | Glu | Leu | | |
| | | | | 245 | | | | 250 | | | | | | 255 | | | |
| ttc | agc | acc | cct | ggc | cac | ctc | aat | gac | gat | gcg | gac | act | gtg | ctg | gtg | 816 | |
| Phe | Ser | Thr | Pro | Gly | His | Leu | Asn | Asp | Asp | Ala | Asp | Thr | Val | Leu | Val | | |

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| Val Gly Glu Ala Gly Ser Gly Lys Ser Thr Leu Leu Gln Arg Leu His | | | |
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| ttg ctg tgg gct gca ggg caa gac ttc cag gaa ttt ctc ttt gtc ttc | | | 912 |
| Leu Leu Trp Ala Ala Gly Gln Asp Phe Gln Glu Phe Leu Phe Val Phe | | | |
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| cca ttc agc tgc cgg cag ctg cag tgc atg gcc aaa cca ctc tct gtg | | | 960 |
| Pro Phe Ser Cys Arg Gln Leu Gln Cys Met Ala Lys Pro Leu Ser Val | | | |
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| cgg act cta ctc ttt gag cac tgc tgt tgg cct gat gtt ggt caa gaa | | | 1008 |
| Arg Thr Leu Leu Phe Glu His Cys Cys Trp Pro Asp Val Gly Gln Glu | | | |
| 325 | 330 | 335 | |
| gac atc ttc cag tta ctc ctt gac cac cct gac cgt gtc ctg tta acc | | | 1056 |
| Asp Ile Phe Gln Leu Leu Leu Asp His Pro Asp Arg Val Leu Leu Thr | | | |
| 340 | 345 | 350 | |
| ttt gat ggc ttt gac gag ttc aag ttc agg ttc acg gat cgt gaa cgc | | | 1104 |
| Phe Asp Gly Phe Asp Glu Phe Lys Phe Arg Phe Thr Asp Arg Glu Arg | | | |
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| cac tgc tcc ccg acc gac ccc acc tct gtc cag acc ctg ctc ttc aac | | | 1152 |
| His Cys Ser Pro Thr Asp Pro Thr Ser Val Gln Thr Leu Leu Phe Asn | | | |
| 370 | 375 | 380 | |
| ctt ctg cag ggc aac ctg ctg aag aat gcc cgc aag gtg gtg acc agc | | | 1200 |
| Leu Leu Gln Gly Asn Leu Leu Lys Asn Ala Arg Lys Val Val Thr Ser | | | |
| 385 | 390 | 395 | 400 |
| cgt ccg gcc gct gtg tcg gcg ttc ctc agg aag tac atc cgc acc gag | | | 1248 |
| Arg Pro Ala Ala Val Ser Ala Phe Leu Arg Lys Tyr Ile Arg Thr Glu | | | |
| 405 | 410 | 415 | |
| ttc aac ctc aag ggc ttc tct gaa cag ggc atc gag ctg tac ctg agg | | | 1296 |
| Phe Asn Leu Lys Gly Phe Ser Glu Gln Gly Ile Glu Leu Tyr Leu Arg | | | |
| 420 | 425 | 430 | |
| aag cgc cat cat gag ccc ggg gtg gcg gac cgc ctc atc cgc ctg ctc | | | 1344 |
| Lys Arg His His Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu | | | |
| 435 | 440 | 445 | |
| caa gag acc tca gcc ctg cac ggt ttg tgc cac ctg cct gtc ttc tca | | | 1392 |
| Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser | | | |
| 450 | 455 | 460 | |
| tgg atg gtg tcc aaa tgc cac cag gaa ctg ttg ctg cag gag ggg ggg | | | 1440 |
| Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly | | | |
| 465 | 470 | 475 | 480 |

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Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe
485 490 495

ctg ctg cat gcc acc ccc cca gac tca gct tcc caa ggt ctg gga ccc 1536
Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro
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Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu
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<210> 83
<211> 560
<212> PRT
<213> Homo sapien

<400> 83
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1 5 10 15

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Glu | Leu | Leu | Val | Ser | Gly | Ser | Leu | Glu | Gly | Phe | Glu | Ser | Val | Leu |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Asp | Trp | Leu | Leu | Ser | Trp | Glu | Val | Leu | Ser | Trp | Glu | Asp | Tyr | Glu | Gly |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Phe | His | Leu | Leu | Gly | Gln | Pro | Leu | Ser | His | Leu | Ala | Arg | Arg | Leu | Leu |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Asp | Thr | Val | Trp | Asn | Lys | Gly | Thr | Trp | Ala | Cys | Gln | Lys | Leu | Ile | Ala |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Ala | Ala | Gln | Glu | Ala | Gln | Ala | Asp | Ser | Gln | Ser | Pro | Lys | Leu | His | Gly |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Cys | Trp | Asp | Pro | His | Ser | Leu | His | Pro | Ala | Arg | Asp | Leu | Gln | Ser | His |
| | | 100 | | | | | | 105 | | | | 110 | | | |
| Arg | Pro | Ala | Ile | Val | Arg | Arg | Leu | His | Ser | His | Val | Glu | Asn | Met | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asp | Leu | Ala | Trp | Glu | Arg | Gly | Phe | Val | Ser | Gln | Tyr | Glu | Cys | Asp | Glu |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Ile | Arg | Leu | Pro | Ile | Phe | Thr | Pro | Ser | Gln | Arg | Ala | Arg | Arg | Leu | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Asp | Leu | Ala | Thr | Val | Lys | Ala | Asn | Gly | Leu | Ala | Ala | Phe | Leu | Leu | Gln |
| | | | | 165 | | | | 170 | | | | | 175 | | |
| His | Val | Gln | Glu | Leu | Pro | Val | Pro | Leu | Ala | Leu | Pro | Leu | Glu | Ala | Ala |
| | | 180 | | | | | 185 | | | | | 190 | | | |
| Thr | Cys | Lys | Lys | Tyr | Met | Ala | Lys | Leu | Arg | Thr | Thr | Val | Ser | Ala | Gln |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ser | Arg | Phe | Leu | Ser | Thr | Tyr | Asp | Gly | Ala | Glu | Thr | Leu | Cys | Leu | Glu |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Asp | Ile | Tyr | Thr | Glu | Asn | Val | Leu | Glu | Val | Trp | Ala | Asp | Val | Gly | Met |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Ala | Gly | Pro | Pro | Gln | Lys | Ser | Pro | Ala | Thr | Leu | Gly | Leu | Glu | Glu | Leu |
| | | | | 245 | | | | 250 | | | | | 255 | | |
| Phe | Ser | Thr | Pro | Gly | His | Leu | Asn | Asp | Asp | Ala | Asp | Thr | Val | Leu | Val |
| | | 260 | | | | | 265 | | | | | 270 | | | |
| Val | Gly | Glu | Ala | Gly | Ser | Gly | Lys | Ser | Thr | Leu | Leu | Gln | Arg | Leu | His |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Leu | Leu | Trp | Ala | Ala | Gly | Gln | Asp | Phe | Gln | Glu | Phe | Leu | Phe | Val | Phe |
| | | 290 | | | | 295 | | | | 300 | | | | | |
| Pro | Phe | Ser | Cys | Arg | Gln | Leu | Gln | Cys | Met | Ala | Lys | Pro | Leu | Ser | Val |
| 305 | | | | | 310 | | | | | 315 | | | | 320 | |
| Arg | Thr | Leu | Leu | Phe | Glu | His | Cys | Cys | Trp | Pro | Asp | Val | Gly | Gln | Glu |
| | | | | 325 | | | | 330 | | | | | 335 | | |
| Asp | Ile | Phe | Gln | Leu | Leu | Leu | Asp | His | Pro | Asp | Arg | Val | Leu | Leu | Thr |
| | | 340 | | | | | 345 | | | | | 350 | | | |
| Phe | Asp | Gly | Phe | Asp | Glu | Phe | Lys | Phe | Arg | Phe | Thr | Asp | Arg | Glu | Arg |
| | | 355 | | | | | 360 | | | | 365 | | | | |
| His | Cys | Ser | Pro | Thr | Asp | Pro | Thr | Ser | Val | Gln | Thr | Leu | Leu | Phe | Asn |
| | | 370 | | | | 375 | | | | | 380 | | | | |
| Leu | Leu | Gln | Gly | Asn | Leu | Leu | Lys | Asn | Ala | Arg | Lys | Val | Val | Thr | Ser |
| 385 | | | | | 390 | | | | | 395 | | | | 400 | |
| Arg | Pro | Ala | Ala | Val | Ser | Ala | Phe | Leu | Arg | Lys | Tyr | Ile | Arg | Thr | Glu |
| | | | | 405 | | | | 410 | | | | | 415 | | |
| Phe | Asn | Leu | Lys | Gly | Phe | Ser | Glu | Gln | Gly | Ile | Glu | Leu | Tyr | Leu | Arg |
| | | 420 | | | | | 425 | | | | | 430 | | | |
| Lys | Arg | His | His | Glu | Pro | Gly | Val | Ala | Asp | Arg | Leu | Ile | Arg | Leu | Leu |

| | | |
|---|-----|-----|
| 435 | 440 | 445 |
| Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser | | |
| 450 | 455 | 460 |
| Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly | | |
| 465 | 470 | 475 |
| Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe | | |
| | 485 | 490 |
| Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro | | |
| | 500 | 505 |
| Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu | | |
| | 515 | 520 |
| Ala Leu Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln | | |
| | 530 | 535 |
| Leu Gln Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu | | |
| 545 | 550 | 555 |
| | | 560 |

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 <211> 1107
 <212> DNA
 <213> Homo sapien

<400> 84
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 aaaaagttgc ttgaaatcct tcaacatgat cctgattcta tcttagacac gttaacttct 180
 cggaggctga tttctgagga agagtatgag actctggaga atgttacaga tctcctgaag 240
 aaaagtcgga agctgttaat tttggtacag aaaaaggagaggcgcactg tcagcatttt 300
 ctcaagtgtt tatttagtac ttttccacag tcagctgcca tttgcggctt aaggcatgaa 360
 gttttaaaac atgagaatac agtacctcct caatctatgg gggcaagcag taattcagaa 420
 gatgcttttt ctcttggaat aaaacagcct gaagcccctg agatcacagt gttcttcagt 480
 gagaaggaac acttggtatt ggaaacctct gagtttttca gggacaagaa aactagttat 540
 agggaaacag ctttgtctgc caggaagaat gagaaggaat atgacacacc agaagtcaca 600
 ttatcatatt cagttgagaa agttggatgt gaagttccag caactattac atatataaaa 660
 gatggacaga gatatgagga gctagatgat tctttatact taggaaaaga ggaatatcta 720
 ggatctgttg acaccctga agatgcagaa gccactgtgg aagaggaggt ttatgatgac 780
 ccagagcacg ttggatatga tggatgaagag gacttcgaga attcagaaac cacagagttc 840
 tctggtgaag aaccaagtta tgagggatca gaaaccagcc tttcattgga ggaggaacag 900
 gagaaaagta tagaaggctg gtctcgaact catgggctta agcgatcctc ccacgttggc 960
 ctcccaaagt gctgggatta caggcgtgag ccaccctgcc tggcctgaaa attctgcctc 1020
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 acattaaaaa aaaaaaaaaa aaaaaaa 1107

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 <211> 510
 <212> DNA
 <213> Homo sapien

<220>
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 <222> (15) ... (305)

<400> 85

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      1          5          10

ttt atc cat tcc atg ggt gaa ggt aca ata aat ggc tta ctg gat gaa 98
Phe Ile His Ser Met Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu
      15          20          25

tta tta cag aca agg gtg ctg aac cag gaa gag atg gag aaa gta aaa 146
Leu Leu Gln Thr Arg Val Leu Asn Gln Glu Glu Met Glu Lys Val Lys
      30          35          40

cgt gaa aat gct aca gtt atg gat aag acc cga gct ttg att gac tcc 194
Arg Glu Asn Ala Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser
      45          50          55          60

gtt att ccg aaa ggg gca cag gca tgc caa att tgc atc aca tac att 242
Val Ile Pro Lys Gly Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile
      65          70          75

tgt gaa gaa gac agt tac ctg gca gag acg ctg gga ctc tca gca ggt 290
Cys Glu Glu Asp Ser Tyr Leu Ala Glu Thr Leu Gly Leu Ser Ala Gly
      80          85          90

ccg ata cct gga aat tagcttagct tagtacacaa gactcccaat tactatttttc 345
Pro Ile Pro Gly Asn
      95

ttccttccca gctcttcagg cagtgcagga caaccagct atgccacat gctcaagccc 405
agaaggcaga atcaagcttt gctttctaga agacgctcaa aggatatgga aacaaaagtt 465
gcagaggtgc catgttcaga atacaataat aaagtggagt aaaga 510

<210> 86
<211> 97
<212> PRT
<213> Homo sapien

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Met Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Gln Thr
      20          25          30
Arg Val Leu Asn Gln Glu Glu Met Glu Lys Val Lys Arg Glu Asn Ala
      35          40          45
Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser Val Ile Pro Lys
      50          55          60
Gly Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp
      65          70          75          80
Ser Tyr Leu Ala Glu Thr Leu Gly Leu Ser Ala Gly Pro Ile Pro Gly
      85          90          95
Asn

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<210> 87
<211> 97
<212> PRT
<213> Homo sapien

<400> 87
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35 40 45
Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser Val Ile Pro Lys
50 55 60
Gly Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp
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Ser Tyr Leu Ala Gly Thr Leu Gly Leu Ser Ala Asp Gln Thr Ser Gly
85 90 95
Asn

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<222> (1)...(318)

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1 5 10 15
ggg aca ata aat ggc tta ctg gat gaa tta ttg gag aca aat gtg ctg 96
Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Glu Thr Asn Val Leu
20 25 30
agc cag gaa gac aca gag ata gta aaa tgt gaa aat gtt aca gtt atc 144
Ser Gln Glu Asp Thr Glu Ile Val Lys Cys Glu Asn Val Thr Val Ile
35 40 45
gat aag gcc cga gat ttg ctt gac tct gtt att cgg aaa ggg gca ggg 192
Asp Lys Ala Arg Asp Leu Leu Asp Ser Val Ile Arg Lys Gly Ala Gly
50 55 60

gca tgt gaa att tgc atc aca tac att tgt gaa gaa gac agg tac ctg 240
Ala Cys Glu Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp Arg Tyr Leu
65 70 75 80

gca ggg acg ctg gga ctc tca gca gga aat gac tac aga gct gga ggc 288
Ala Gly Thr Leu Gly Leu Ser Ala Gly Asn Asp Tyr Arg Ala Gly Gly
85 90 95

att tgc tca ccg ccc aga gca caa gac ctc tga 321
Ile Cys Ser Pro Pro Arg Ala Gln Asp Leu
100 105

<210> 90
<211> 106
<212> PRT
<213> Homo sapien

<400> 90
Met Ile Leu Leu Lys Lys Arg Arg Leu Leu Ile Asn Ser Leu Gly Glu
1 5 10 15
Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Glu Thr Asn Val Leu
20 25 30
Ser Gln Glu Asp Thr Glu Ile Val Lys Cys Glu Asn Val Thr Val Ile
35 40 45
Asp Lys Ala Arg Asp Leu Leu Asp Ser Val Ile Arg Lys Gly Ala Gly
50 55 60
Ala Cys Glu Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp Arg Tyr Leu
65 70 75 80
Ala Gly Thr Leu Gly Leu Ser Ala Gly Asn Asp Tyr Arg Ala Gly Gly
85 90 95
Ile Cys Ser Pro Pro Arg Ala Gln Asp Leu
100 105

<210> 91
<211> 108
<212> PRT
<213> Homo sapien

<400> 91
Met Ala Asp Lys Val Leu Leu Glu Lys Arg Lys Leu Leu Ile Asn Ser
1 5 10 15
Leu Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Glu Thr
20 25 30
Asn Val Leu Ser Gln Glu Asp Glu Ile Val Lys Arg Glu Asn Ala Thr
35 40 45
Val Ile Asp Lys Ala Arg Ala Leu Leu Asp Ser Val Ile Arg Lys Gly
50 55 60
Ala Gly Ala Cys Glu Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp Ser
65 70 75 80
Tyr Leu Ala Gly Thr Leu Gly Leu Ser Ala Gly Asn Ala Val Gln Ala

| | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 85 | | | | | 90 | | 95 |
| Gly | Gly | Ala | Cys | Ser | Thr | Ser | Ser | Gly | Gln | Asp |
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<400> 92
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<210> 93

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<210> 96

<211> 3396

<212> DNA

<213> Homo sapien

<220>

<221> CDS

<222> (277)...(3348)

<400> 96

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| aaaactggtg | atctgtttgc | cctgtgtgac | cttgcccaga | accctgctga | ctgagagaac | 120 |
| acatctgctg | gaagtcctct | gggattcaag | gtacagggaa | tgaagagtag | ttttacagaa | 180 |
| aaaagaggac | aatattggga | tcacctttga | cctttccatt | tggaaataat | atcttctatt | 240 |
| gtgttataga | aaggtgggaa | gctttcatcc | agaaca | atg | aat ttc ata aag gac | 294 |
| | | | | Met | Asn Phe Ile Lys Asp | |
| | | | | 1 | 5 | |

| | |
|---|-----|
| aat agc cga gcc ctt att caa aga atg gga atg act gtt ata aag caa | 342 |
| Asn Ser Arg Ala Leu Ile Gln Arg Met Gly Met Thr Val Ile Lys Gln | |
| 10 15 20 | |

| | |
|---|-----|
| atc aca gat gac cta ttt gta tgg aat gtt ctg aat cgc gaa gaa gta | 390 |
| Ile Thr Asp Asp Leu Phe Val Trp Asn Val Leu Asn Arg Glu Glu Val | |
| 25 30 35 | |

| | |
|---|-----|
| aac atc att tgc tgc gag aag gtg gag cag gat gct gct aga ggg atc | 438 |
| Asn Ile Ile Cys Cys Glu Lys Val Glu Gln Asp Ala Ala Arg Gly Ile | |

| 40 | 45 | 50 | |
|---|-----|-----|------|
| att cac atg att ttg aaa aag ggt tca gag tcc tgt aac ctc ttt ctt | | | 486 |
| Ile His Met Ile Leu Lys Lys Gly Ser Glu Ser Cys Asn Leu Phe Leu | | | |
| 55 | 60 | 65 | 70 |
| aaa tcc ctt aag gag tgg aac tat cct cta ttt cag gac ttg aat gga | | | 534 |
| Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly | | | |
| 75 | 80 | | 85 |
| caa agt ctt ttt cat cag aca tca gaa gga gac ttg gac gat ttg gct | | | 582 |
| Gln Ser Leu Phe His Gln Thr Ser Glu Gly Asp Leu Asp Asp Leu Ala | | | |
| 90 | 95 | | 100 |
| cag gat tta aag gac ttg tac cat acc cca tct ttt ctg aac ttt tat | | | 630 |
| Gln Asp Leu Lys Asp Leu Tyr His Thr Pro Ser Phe Leu Asn Phe Tyr | | | |
| 105 | 110 | | 115 |
| ccc ctt ggt gaa gat att gac att att ttt aac ttg aaa agc acc ttc | | | 678 |
| Pro Leu Gly Glu Asp Ile Asp Ile Ile Phe Asn Leu Lys Ser Thr Phe | | | |
| 120 | 125 | | 130 |
| aca gaa cct atc ctg tgg agg aag gac caa cac cat cac cgc gtg gag | | | 726 |
| Thr Glu Pro Ile Leu Trp Arg Lys Asp Gln His His His Arg Val Glu | | | |
| 135 | 140 | 145 | 150 |
| cag ctg acc ctg aat ggc ctc ctg cag gct ctt cag agc ccc tgc atc | | | 774 |
| Gln Leu Thr Leu Asn Gly Leu Leu Gln Ala Leu Gln Ser Pro Cys Ile | | | |
| 155 | 160 | | 165 |
| att gaa ggg gaa tct ggc aaa ggc aag tcc act ctg ctg cag cgc att | | | 822 |
| Ile Glu Gly Glu Ser Gly Lys Gly Lys Ser Thr Leu Leu Gln Arg Ile | | | |
| 170 | 175 | | 180 |
| gcc atg ctc tgg ggc tcc gga aag tgc aag gct ctg acc aag ttc aaa | | | 870 |
| Ala Met Leu Trp Gly Ser Gly Lys Cys Lys Ala Leu Thr Lys Phe Lys | | | |
| 185 | 190 | | 195 |
| ttc gtc ttc ttc ctc cgt ctc agc agg gcc cag ggt gga ctt ttt gaa | | | 918 |
| Phe Val Phe Phe Leu Arg Leu Ser Arg Ala Gln Gly Gly Leu Phe Glu | | | |
| 200 | 205 | | 210 |
| acc ctc tgt gat caa ctc ctg gat ata cct ggc aca atc agg aag cag | | | 966 |
| Thr Leu Cys Asp Gln Leu Leu Asp Ile Pro Gly Thr Ile Arg Lys Gln | | | |
| 215 | 220 | 225 | 230 |
| aca ttc atg gcc atg ctg ctg aag ctg cgg cag agg gtt ctt ttc ctt | | | 1014 |
| Thr Phe Met Ala Met Leu Leu Lys Leu Arg Gln Arg Val Leu Phe Leu | | | |
| 235 | 240 | | 245 |
| ctt gat ggc tac aat gaa ttc aag ccc cag aac tgc cca gaa atc gaa | | | 1062 |
| Leu Asp Gly Tyr Asn Glu Phe Lys Pro Gln Asn Cys Pro Glu Ile Glu | | | |
| 250 | 255 | | 260 |

| | |
|---|------|
| gcc ctg ata aag gaa aac cac cgc ttc aag aac atg gtc atc gtc acc | 1110 |
| Ala Leu Ile Lys Glu Asn His Arg Phe Lys Asn Met Val Ile Val Thr | |
| 265 270 275 | |
| act acc act gag tgc ctg agg cac ata cgg cag ttt ggt gcc ctg act | 1158 |
| Thr Thr Thr Glu Cys Leu Arg His Ile Arg Gln Phe Gly Ala Leu Thr | |
| 280 285 290 | |
| gct gag gtg ggg gat atg aca gaa gac agc gcc cag gct ctc atc cga | 1206 |
| Ala Glu Val Gly Asp Met Thr Glu Asp Ser Ala Gln Ala Leu Ile Arg | |
| 295 300 305 310 | |
| gaa gtg ctg atc aag gag ctt gct gaa ggc ttg ttg ctc caa att cag | 1254 |
| Glu Val Leu Ile Lys Glu Leu Ala Glu Gly Leu Leu Leu Gln Ile Gln | |
| 315 320 325 | |
| aaa tcc agg tgc ttg agg aat ctc atg aag acc cct ctc ttt gtg gtc | 1302 |
| Lys Ser Arg Cys Leu Arg Asn Leu Met Lys Thr Pro Leu Phe Val Val | |
| 330 335 340 | |
| atc act tgt gca atc cag atg ggt gaa agt gag ttc cac tct cac aca | 1350 |
| Ile Thr Cys Ala Ile Gln Met Gly Glu Ser Glu Phe His Ser His Thr | |
| 345 350 355 | |
| caa aca acg ctg ttc cat acc ttc tat gat ctg ttg ata cag aaa aac | 1398 |
| Gln Thr Thr Leu Phe His Thr Phe Tyr Asp Leu Leu Ile Gln Lys Asn | |
| 360 365 370 | |
| aaa cac aaa cat aaa ggt gtg gct gca agt gac ttc att cgg agc ctg | 1446 |
| Lys His Lys His Lys Gly Val Ala Ala Ser Asp Phe Ile Arg Ser Leu | |
| 375 380 385 390 | |
| gac cac cgt gga gac cta gct ctg gag ggt gtg ttc tcc cac aag ttt | 1494 |
| Asp His Arg Gly Asp Leu Ala Leu Glu Gly Val Phe Ser His Lys Phe | |
| 395 400 405 | |
| gat ttc gaa ctg cag gat gtg tcc agc gtg aat gag gat gtc ctg ctg | 1542 |
| Asp Phe Glu Leu Gln Asp Val Ser Ser Val Asn Glu Asp Val Leu Leu | |
| 410 415 420 | |
| aca act ggg ctc ctc tgt aaa tat aca gct caa agg ttc aag cca aag | 1590 |
| Thr Thr Gly Leu Leu Cys Lys Tyr Thr Ala Gln Arg Phe Lys Pro Lys | |
| 425 430 435 | |
| tat aaa ttc ttt cac aag tca ttc cag gag tac aca gca gga cga aga | 1638 |
| Tyr Lys Phe Phe His Lys Ser Phe Gln Glu Tyr Thr Ala Gly Arg Arg | |
| 440 445 450 | |
| ctc agc agt tta ttg acg tct cat gag cca gag gag gtg acc aag ggg | 1686 |
| Leu Ser Ser Leu Leu Thr Ser His Glu Pro Glu Glu Val Thr Lys Gly | |
| 455 460 465 470 | |

| | |
|---|------|
| aat ggt tac ttg cag aaa atg gtt tcc att tcg gac att aca tcc act | 1734 |
| Asn Gly Tyr Leu Gln Lys Met Val Ser Ile Ser Asp Ile Thr Ser Thr | |
| 475 480 485 | |
| tat agc agc ctg ctc cgg tac acc tgt ggg tca tct gtg gaa gcc acc | 1782 |
| Tyr Ser Ser Leu Leu Arg Tyr Thr Cys Gly Ser Ser Val Glu Ala Thr | |
| 490 495 500 | |
| agg gct gtt atg aag cac ctc gca gca gtg tat caa cac ggc tgc ctt | 1830 |
| Arg Ala Val Met Lys His Leu Ala Ala Val Tyr Gln His Gly Cys Leu | |
| 505 510 515 | |
| ctc gga ctt tcc atc gcc aag agg cct ctc tgg aga cag gaa tct ttg | 1878 |
| Leu Gly Leu Ser Ile Ala Lys Arg Pro Leu Trp Arg Gln Glu Ser Leu | |
| 520 525 530 | |
| caa agt gtg aaa aac acc act gag caa gaa att ctg aaa gcc ata aac | 1926 |
| Gln Ser Val Lys Asn Thr Thr Glu Gln Glu Ile Leu Lys Ala Ile Asn | |
| 535 540 545 550 | |
| atc aat tcc ttt gta gag tgt ggc atc cat tta tat caa gag agt aca | 1974 |
| Ile Asn Ser Phe Val Glu Cys Gly Ile His Leu Tyr Gln Glu Ser Thr | |
| 555 560 565 | |
| tcc aaa tca gcc ctg agc caa gaa ttt gaa gct ttc ttt caa ggt aaa | 2022 |
| Ser Lys Ser Ala Leu Ser Gln Glu Phe Glu Ala Phe Phe Gln Gly Lys | |
| 570 575 580 | |
| agc tta tat atc aac tca ggg aac atc ccc gat tac tta ttt gac ttc | 2070 |
| Ser Leu Tyr Ile Asn Ser Gly Asn Ile Pro Asp Tyr Leu Phe Asp Phe | |
| 585 590 595 | |
| ttt gaa cat ttg ccc aat tgt gca agt gcc ctg gac ttc att aaa ctg | 2118 |
| Phe Glu His Leu Pro Asn Cys Ala Ser Ala Leu Asp Phe Ile Lys Leu | |
| 600 605 610 | |
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| aca ggt gga atc cac atg gaa gag gcc cca gaa acc tac att ccc agc | 2214 |
| Thr Gly Gly Ile His Met Glu Glu Ala Pro Glu Thr Tyr Ile Pro Ser | |
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| | | | | | | | | | | | | | | | | | |
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| Tyr | Leu | Gly | Lys | Ile | Phe | Ser | Ser | Ala | Thr | Ser | Leu | Arg | Leu | Gln | Ile | | |
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| Lys | Arg | Cys | Ala | Gly | Val | Ala | Gly | Ser | Leu | Ser | Leu | Val | Leu | Ser | Thr | | |
| 695 | | | | | 700 | | | | | 705 | | | | | 710 | | |
| tgt | aag | aac | att | tat | tct | ctc | atg | gtg | gaa | gcc | agt | ccc | ctc | acc | ata | 2454 | |
| Cys | Lys | Asn | Ile | Tyr | Ser | Leu | Met | Val | Glu | Ala | Ser | Pro | Leu | Thr | Ile | | |
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| Ile | His | Asp | Leu | Gln | Asn | Gln | Arg | Leu | Pro | Gly | Gly | Leu | Thr | Asp | Ser | | |
| | | 745 | | | | | 750 | | | | | | 755 | | | | |
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| Leu | Gly | Asn | Leu | Lys | Asn | Leu | Thr | Lys | Leu | Ile | Met | Asp | Asn | Ile | Lys | | |
| | 760 | | | | | 765 | | | | | 770 | | | | | | |
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| Met | Asn | Glu | Glu | Asp | Ala | Ile | Lys | Leu | Ala | Glu | Gly | Leu | Lys | Asn | Leu | | |
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| Lys | Lys | Met | Cys | Leu | Phe | His | Leu | Thr | His | Leu | Ser | Asp | Ile | Gly | Glu | | |
| | | | 795 | | | | | | 800 | | | | | 805 | | | |
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| Gly | Met | Asp | Tyr | Ile | Val | Lys | Ser | Leu | Ser | Ser | Glu | Pro | Cys | Asp | Leu | | |
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| atc | cta | gct | cag | aat | ctt | cac | aat | ttg | gtc | aaa | ctg | agc | att | ctt | gat | 2838 | |
| Ile | Leu | Ala | Gln | Asn | Leu | His | Asn | Leu | Val | Lys | Leu | Ser | Ile | Leu | Asp | | |
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| Pro | Trp | Gly | Cys | Asp | Val | Gln | Gly | Ser | Leu | Ser | Ser | Leu | Leu | Lys | His | | |

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| Leu Thr Asp Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn | | | |
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| Pro Leu Lys Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser | | | |
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| Leu Val Phe Phe Asp Phe Ser Thr Lys Glu Phe Leu Pro Asp Pro Ala | | | |
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| Leu Val Arg Lys Leu Ser Gln Val Leu Ser Lys Leu Thr Phe Leu Gln | | | |
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| Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu | | | |
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| Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu | | | |
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| Phe Gln Asp Leu Asn Gly Gln Ser Leu Phe His Gln Thr Ser Glu Gly | | | |

| | | | | | | | | | | | | | | | |
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| Asp | Leu | Asp | Asp | Leu | Ala | Gln | Asp | Leu | Lys | Asp | Leu | Tyr | His | Thr | Pro |
| | | | 100 | | | | | | 105 | : | | | 110 | | |
| Ser | Phe | Leu | Asn | Phe | Tyr | Pro | Leu | Gly | Glu | Asp | Ile | Asp | Ile | Ile | Phe |
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| Leu | Gln | Ser | Pro | Cys | Ile | Ile | Glu | Gly | Glu | Ser | Gly | Lys | Gly | Lys | Ser |
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| Thr | Pro | Leu | Phe | Val | Val | Ile | Thr | Cys | Ala | Ile | Gln | Met | Gly | Glu | Ser |
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| Asn | Glu | Asp | Val | Leu | Leu | Thr | Thr | Gly | Leu | Leu | Cys | Lys | Tyr | Thr | Ala |
| | | | 420 | | | | | 425 | | : | | | 430 | | |
| Gln | Arg | Phe | Lys | Pro | Lys | Tyr | Lys | Phe | His | Lys | Ser | Phe | Gln | Glu | |
| | | 435 | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Gln | His | Gly | Cys | Leu | Leu | Gly | Leu | Ser | Ile | Ala | Lys | Arg | Pro | Leu |
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| Trp | Arg | Gln | Glu | Ser | Leu | Gln | Ser | Val | Lys | Asn | Thr | Thr | Glu | Gln | Glu |
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| Leu | Asp | Phe | Ile | Lys | Leu | Asp | Phe | Tyr | Gly | Gly | Ala | Met | Ala | Ser | Trp |
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| Glu | Lys | Ala | Ala | Glu | Asp | Thr | Gly | Gly | Ile | His | Met | Glu | Glu | Ala | Pro |
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| Gln | Glu | Phe | Arg | Thr | Leu | Glu | Val | Thr | Leu | Arg | Asp | Phe | Ser | Lys | Leu |
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| Gly | Gly | Leu | Thr | Asp | Ser | Leu | Gly | Asn | Leu | Lys | Asn | Leu | Thr | Lys | Leu |
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| Glu | Gly | Leu | Lys | Asn | Leu | Lys | Lys | Met | Cys | Leu | Phe | His | Leu | Thr | His |
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| Asn | | | | | | | | | | | | | | | |

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| | 965 | 970 |
| Phe Leu Pro Asp Pro Ala Leu Val Arg Lys Leu Ser Gln Val Leu Ser | | 975 |
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| Lys Leu Thr Phe Leu Gln Glu Ala Arg Leu Val Gly Trp Gln Phe Asp | | 990 |
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Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly
75 80 85

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| Ala Glu Gly Leu Lys Asn Leu Lys Lys Met Cys Leu Phe His Leu Thr | | | |
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| Val Lys Leu Ser Ile Leu Asp Leu Ser Glu Asn Tyr Leu Glu Lys Asp | | | |
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| Leu Ala Gly Asn Arg Val Ser Ser Asp Gly Trp Leu Ala Phe Met Gly | | | |
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| Val Phe Glu Asn Leu Lys Gln Leu Val Phe Phe Asp Phe Ser Thr Lys | | | |
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Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val
      20          25          30
Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
      35          40          45
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
      50          55          60
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
      65          70          75          80
Phe Gln Asp Leu Asn Gly Gln Ser Gly Leu Thr Asp Ser Leu Gly Asn
      85          90          95
Leu Lys Asn Leu Thr Lys Leu Ile Met Asp Asn Ile Lys Met Asn Glu
      100         105         110
Glu Asp Ala Ile Lys Leu Ala Glu Gly Leu Lys Asn Leu Lys Lys Met
      115         120         125
Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu Gly Met Asp
      130         135         140
Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu Glu Glu Ile
      145         150         155         160
Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys Ile Leu Ala
      165         170         175
Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp Leu Ser Glu
      180         185         190
Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu Leu Ile Asp
      195         200         205
Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu Pro Trp Gly
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Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His Leu Glu Glu

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 | | 230 | | 235 | | 240 | | | | | | | | | |
| Val | Pro | Gln | Leu | Val | Lys | Leu | Gly | Leu | Lys | Asn | Trp | Arg | Leu | Thr | Asp |
| | | 245 | | | | 250 | | | | | | | 255 | | |
| Thr | Glu | Ile | Arg | Ile | Leu | Gly | Ala | Phe | Phe | Gly | Lys | Asn | Pro | Leu | Lys |
| | | 260 | | | | 265 | | | | | | | 270 | | |
| Asn | Phe | Gln | Gln | Leu | Asn | Leu | Ala | Gly | Asn | Arg | Val | Ser | Ser | Asp | Gly |
| | | 275 | | | | 280 | | | | | | | 285 | | |
| Trp | Leu | Ala | Phe | Met | Gly | Val | Phe | Glu | Asn | Leu | Lys | Gln | Leu | Val | Phe |
| | | 290 | | | | 295 | | | | | | | 300 | | |
| Phe | Asp | Phe | Ser | Thr | Lys | Glu | Phe | Leu | Pro | Asp | Pro | Ala | Leu | Val | Arg |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Lys | Leu | Ser | Gln | Val | Leu | Ser | Lys | Leu | Thr | Phe | Leu | Gln | Glu | Ala | Arg |
| | | | | 325 | | | | | 330 | | | | | | 335 |
| Leu | Val | Gly | Trp | Gln | Phe | Asp | Asp | Asp | Asp | Leu | Ser | Val | Ile | Thr | Gly |
| | | 340 | | | | | | 345 | | | | | | | 350 |
| Ala | Phe | Lys | Leu | Val | Thr | Ala | | | | | | | | | |
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 acatctgctg gaagtcctct gggattcaag gtacagggaa tgaagagtag ttttacagaa 180
 aaaagaggac aatattggga tcacctttga cttttccatt tggaaataat attttctatt 240
 gtgttataga aagggtggaa gctttcatcc agaaca atg aat ttc ata aag gac 294
 Met Asn Phe Ile Lys Asp
 1 5

aat agc cga gcc ctt att caa aga atg gga atg act gtt ata aag caa 342
 Asn Ser Arg Ala Leu Ile Gln Arg Met Gly Met Thr Val Ile Lys Gln
 10 15 20

atc aca gat gac cta ttt gta tgg aat gtt ctg aat cgc gaa gaa gta 390
 Ile Thr Asp Asp Leu Phe Val Trp Asn Val Leu Asn Arg Glu Glu Val
 25 30 35

aac atc att tgc tgc gag aag gtg gag cag gat gct gct aga ggg atc 438
 Asn Ile Ile Cys Cys Glu Lys Val Glu Gln Asp Ala Ala Arg Gly Ile
 40 45 50

att cac atg att ttg aaa aag ggt tca gag tcc tgt aac ctc ttt ctt 486
 Ile His Met Ile Leu Lys Lys Gly Ser Glu Ser Cys Asn Leu Phe Leu
 55 60 65 70

aaa tcc ctt aag gag tgg aac tat cct cta ttt cag gac ttg aat gga 534
Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly
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Gln Ser Leu Leu Thr Ala
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Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
35 40 45
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
50 55 60
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
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Phe Gln Asp Leu Asn Gly Gln Ser Leu Leu Thr Ala
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acatctgctg gaagtcctct gggattcaag gtacagggaa tgaagagtag ttttacagaa 180
aaaagaggac aatattggga tcacctttga cttttccatt tggaaataat attttctatt 240
gtgttataga aagggtggga gctttcatcc agaaca atg aat ttc ata aag gac 294
Met Asn Phe Ile Lys Asp
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Asn Ser Arg Ala Leu Ile Gln Arg Met Gly Met Thr Val Ile Lys Gln
10 15 20

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Ile Thr Asp Asp Leu Phe Val Trp Asn Val Leu Asn Arg Glu Glu Val

| 25 | 30 | 35 | |
|---|-----|-----|-----|
| aac atc att tgc tgc gag aag gtg gag cag gat gct gct aga ggg atc | | | 438 |
| Asn Ile Ile Cys Cys Glu Lys Val Glu Gln Asp Ala Ala Arg Gly Ile | | | |
| 40 | 45 | 50 | |
| att cac atg att ttg aaa aag ggt tca gag tcc tgt aac ctc ttt ctt | | | 486 |
| Ile His Met Ile Leu Lys Lys Gly Ser Glu Ser Cys Asn Leu Phe Leu | | | |
| 55 | 60 | 65 | 70 |
| aaa tcc ctt aag gag tgg aac tat cct cta ttt cag gac ttg aat gga | | | 534 |
| Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly | | | |
| 75 | 80 | 85 | |
| caa agt ctt ttt cat cag aca tca gaa gga gac ttg gac gat ttg gct | | | 582 |
| Gln Ser Leu Phe His Gln Thr Ser Glu Gly Asp Leu Asp Asp Leu Ala | | | |
| 90 | 95 | 100 | |
| cag gat tta aag gac ttg tac cat acc cca tct ttt ctg aac ttt tat | | | 630 |
| Gln Asp Leu Lys Asp Leu Tyr His Thr Pro Ser Phe Leu Asn Phe Tyr | | | |
| 105 | 110 | 115 | |
| ccc ctt ggt gaa gat att gac att att ttt aac ttg aaa agc acc ttc | | | 678 |
| Pro Leu Gly Glu Asp Ile Asp Ile Ile Phe Asn Leu Lys Ser Thr Phe | | | |
| 120 | 125 | 130 | |
| aca gaa cct gtc ctg tgg agg aag gac caa cac cat cac cgc gtg gag | | | 726 |
| Thr Glu Pro Val Leu Trp Arg Lys Asp Gln His His His Arg Val Glu | | | |
| 135 | 140 | 145 | 150 |
| cag ctg acc cta gtt tta tagcatcttc tacctgcccg ggcg | | | 768 |
| Gln Leu Thr Leu Val Leu | | | |
| 155 | | | |

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 35 40 45
 Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
 50 55 60
 Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
 65 70 75 80
 Phe Gln Asp Leu Asn Gly Gln Ser Leu Phe His Gln Thr Ser Glu Gly
 85 90 95

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Asp | Asp | Leu | Ala | Gln | Asp | Leu | Lys | Asp | Leu | Tyr | His | Thr | Pro |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Ser | Phe | Leu | Asn | Phe | Tyr | Pro | Leu | Gly | Glu | Asp | Ile | Asp | Ile | Ile | Phe |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asn | Leu | Lys | Ser | Thr | Phe | Thr | Glu | Pro | Val | Leu | Trp | Arg | Lys | Asp | Gln |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| His | His | His | Arg | Val | Glu | Gln | Leu | Thr | Leu | Val | Leu | | | | |
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 <213> Artificial Sequence

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 <223> Primer

<400> 106
 atgatactcc tgaagaagag 20

<210> 107
 <211> 1009
 <212> PRT
 <213> Homo sapien

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Glu | Met | Cys | Ser | Gln | Glu | Ala | Phe | Gln | Ala | Gln | Arg | Ser | Gln | Leu |
| 1 | | | 5 | | | | | 10 | | | | | 15 | | |
| Val | Glu | Leu | Leu | Val | Ser | Gly | Ser | Leu | Glu | Gly | Phe | Glu | Ser | Val | Leu |
| | | 20 | | | | | 25 | | | | | 30 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Trp | Leu | Leu | Ser | Trp | Glu | Val | Leu | Ser | Trp | Glu | Asp | Tyr | Glu | Gly |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Phe | His | Leu | Leu | Gly | Gln | Pro | Leu | Ser | His | Leu | Ala | Arg | Arg | Leu | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Asp | Thr | Val | Trp | Asn | Lys | Gly | Thr | Trp | Ala | Cys | Gln | Lys | Leu | Ile | Ala |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ala | Ala | Gln | Glu | Ala | Gln | Ala | Asp | Ser | Gln | Ser | Pro | Lys | Leu | His | Gly |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Cys | Trp | Asp | Pro | His | Ser | Leu | His | Pro | Ala | Arg | Asp | Leu | Gln | Ser | His |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Arg | Pro | Ala | Ile | Val | Arg | Arg | Leu | His | Ser | His | Val | Glu | Asn | Met | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asp | Leu | Ala | Trp | Glu | Arg | Gly | Phe | Val | Ser | Gln | Tyr | Glu | Cys | Asp | Glu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ile | Arg | Leu | Pro | Ile | Phe | Thr | Pro | Ser | Gln | Arg | Ala | Arg | Arg | Leu | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Asp | Leu | Ala | Thr | Val | Lys | Ala | Asn | Gly | Leu | Ala | Ala | Phe | Leu | Leu | Gln |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| His | Val | Gln | Glu | Leu | Pro | Val | Pro | Leu | Ala | Leu | Pro | Leu | Glu | Ala | Ala |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Thr | Cys | Lys | Lys | Tyr | Met | Ala | Lys | Leu | Arg | Thr | Thr | Val | Ser | Ala | Gln |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ser | Arg | Phe | Leu | Ser | Thr | Tyr | Asp | Gly | Ala | Glu | Thr | Leu | Cys | Leu | Glu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Asp | Ile | Tyr | Thr | Glu | Asn | Val | Leu | Glu | Val | Trp | Ala | Asp | Val | Gly | Met |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Gly | Pro | Pro | Gln | Lys | Ser | Pro | Ala | Thr | Leu | Gly | Leu | Glu | Glu | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Ser | Thr | Pro | Gly | His | Leu | Asn | Asp | Asp | Ala | Asp | Thr | Val | Leu | Val |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Val | Gly | Glu | Ala | Gly | Ser | Gly | Lys | Ser | Thr | Leu | Leu | Gln | Arg | Leu | His |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Leu | Leu | Trp | Ala | Ala | Gly | Gln | Asp | Phe | Gln | Glu | Phe | Leu | Phe | Val | Phe |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Pro | Phe | Ser | Cys | Arg | Gln | Leu | Gln | Cys | Met | Ala | Lys | Pro | Leu | Ser | Val |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Arg | Thr | Leu | Leu | Phe | Glu | His | Cys | Cys | Trp | Pro | Asp | Val | Gly | Gln | Glu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asp | Ile | Phe | Gln | Leu | Leu | Leu | Asp | His | Pro | Asp | Arg | Val | Leu | Leu | Thr |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Phe | Asp | Gly | Phe | Asp | Glu | Phe | Lys | Phe | Arg | Phe | Thr | Asp | Arg | Glu | Arg |
| | 355 | | | | | | 360 | | | | | 365 | | | |
| His | Cys | Ser | Pro | Thr | Asp | Pro | Thr | Ser | Val | Gln | Thr | Leu | Leu | Phe | Asn |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Leu | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| 450 | | 455 | | 460 | | | | | | | | | | | | | | | |
| Trp | Met | Val | Ser | Lys | Cys | His | Gln | Glu | Leu | Leu | Leu | Gln | Glu | Gly | Gly | | | | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | | | |
| Ser | Pro | Lys | Thr | Thr | Thr | Asp | Met | Tyr | Leu | Leu | Ile | Leu | Gln | His | Phe | | | | |
| | | | | 485 | | | | | 490 | | | | | | 495 | | | | |
| Leu | Leu | His | Ala | Thr | Pro | Pro | Asp | Ser | Ala | Ser | Gln | Gly | Leu | Gly | Pro | | | | |
| | | | 500 | | | | | 505 | | | | | 510 | | | | | | |
| Ser | Leu | Leu | Arg | Gly | Arg | Leu | Pro | Thr | Leu | Leu | His | Leu | Gly | Arg | Leu | | | | |
| | | 515 | | | | | 520 | | | | | 525 | | | | | | | |
| Ala | Leu | Trp | Gly | Leu | Gly | Met | Cys | Cys | Tyr | Val | Phe | Ser | Ala | Gln | Gln | | | | |
| | 530 | | | | 535 | | | | | 540 | | | | | | | | | |
| Leu | Gln | Ala | Ala | Gln | Val | Ser | Pro | Asp | Asp | Ile | Ser | Leu | Gly | Phe | Leu | | | | |
| 545 | | | | | 550 | | | | 555 | | | | | | 560 | | | | |
| Val | Arg | Ala | Lys | Gly | Val | Val | Pro | Gly | Ser | Thr | Ala | Pro | Leu | Glu | Phe | | | | |
| | | | 565 | | | | | 570 | | | | | | | 575 | | | | |
| Leu | His | Ile | Thr | Phe | Gln | Cys | Phe | Phe | Ala | Ala | Phe | Tyr | Leu | Ala | Leu | | | | |
| | | 580 | | | | | 585 | | | | | 590 | | | | | | | |
| Ser | Ala | Asp | Val | Pro | Pro | Ala | Leu | Leu | Arg | His | Leu | Phe | Asn | Cys | Gly | | | | |
| | 595 | | | | | 600 | | | | | 605 | | | | | | | | |
| Arg | Pro | Gly | Asn | Ser | Pro | Met | Ala | Arg | Leu | Leu | Pro | Thr | Met | Cys | Ile | | | | |
| | 610 | | | | 615 | | | | 620 | | | | | | | | | | |
| Gln | Ala | Ser | Glu | Gly | Lys | Asp | Ser | Ser | Val | Ala | Ala | Leu | Leu | Gln | Lys | | | | |
| 625 | | | | | 630 | | | | 635 | | | | | | 640 | | | | |
| Ala | Glu | Pro | His | Asn | Leu | Gln | Ile | Thr | Ala | Ala | Phe | Leu | Ala | Gly | Leu | | | | |
| | | | 645 | | | | | 650 | | | | | | | 655 | | | | |
| Leu | Ser | Arg | Glu | His | Trp | Gly | Leu | Leu | Ala | Glu | Cys | Gln | Thr | Ser | Glu | | | | |
| | 660 | | | | | 665 | | | | | | 670 | | | | | | | |
| Lys | Ala | Leu | Leu | Arg | Arg | Gln | Ala | Cys | Ala | Arg | Trp | Cys | Leu | Ala | Arg | | | | |
| | 675 | | | | | 680 | | | | | 685 | | | | | | | | |
| Ser | Leu | Arg | Lys | His | Phe | His | Ser | Ile | Pro | Pro | Ala | Ala | Pro | Gly | Glu | | | | |
| | 690 | | | | 695 | | | | 700 | | | | | | | | | | |
| Ala | Lys | Ser | Val | His | Ala | Met | Pro | Gly | Phe | Ile | Trp | Leu | Ile | Arg | Ser | | | | |
| 705 | | | | | 710 | | | | 715 | | | | | | 720 | | | | |
| Leu | Tyr | Glu | Met | Gln | Glu | Glu | Arg | Leu | Ala | Arg | Lys | Ala | Ala | Arg | Gly | | | | |
| | | | 725 | | | | | 730 | | | | | | | 735 | | | | |
| Leu | Asn | Val | Gly | His | Leu | Lys | Leu | Thr | Phe | Cys | Ser | Val | Gly | Pro | Thr | | | | |
| | 740 | | | | | 745 | | | | | | 750 | | | | | | | |
| Glu | Cys | Ala | Ala | Leu | Ala | Phe | Val | Leu | Gln | His | Leu | Arg | Arg | Pro | Val | | | | |
| | 755 | | | | 760 | | | | | | 765 | | | | | | | | |
| Ala | Leu | Gln | Leu | Asp | Tyr | Asn | Ser | Val | Gly | Asp | Ile | Gly | Val | Glu | Gln | | | | |
| | 770 | | | | 775 | | | | 780 | | | | | | | | | | |
| Leu | Leu | Pro | Cys | Leu | Gly | Val | Cys | Lys | Ala | Leu | Tyr | Leu | Arg | Asp | Asn | | | | |
| 785 | | | | | 790 | | | | 795 | | | | | | 800 | | | | |
| Asn | Ile | Ser | Asp | Arg | Gly | Ile | Cys | Lys | Leu | Ile | Glu | Cys | Ala | Leu | His | | | | |
| | | | 805 | | | | | 810 | | | | | | | 815 | | | | |
| Cys | Glu | Gln | Leu | Gln | Lys | Leu | Ala | Leu | Gly | Asn | Asn | Tyr | Ile | Thr | Ala | | | | |
| | 820 | | | | | 825 | | | | | | 830 | | | | | | | |
| Ala | Gly | Ala | Gln | Val | Leu | Ala | Glu | Gly | Leu | Arg | Gly | Asn | Thr | Ser | Leu | | | | |
| | 835 | | | | | 840 | | | | | | 845 | | | | | | | |
| Gln | Phe | Leu | Gly | Phe | Trp | Gly | Asn | Arg | Val | Gly | Asp | Glu | Gly | Ala | Gln | | | | |
| | 850 | | | | 855 | | | | 860 | | | | | | | | | | |
| Ala | Leu | Ala | Glu | Ala | Leu | Gly | Asp | His | Gln | Ser | Leu | Arg | Trp | Leu | Ser | | | | |
| 865 | | | | | 870 | | | | 875 | | | | | | 880 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|
| Leu | Val | Gly | Asn | Asn | Ile | Gly | Ser | Val | Gly | Ala | Gln | Ala | Leu | Ala | Leu |
| | | | | 885 | | | | | 890 | | | | | 895 | |
| Met | Leu | Ala | Lys | Asn | Val | Met | Leu | Glu | Glu | Leu | Cys | Leu | Glu | Glu | Asn |
| | | | 900 | | | | | 905 | | | | | 910 | | |
| His | Leu | Gln | Asp | Glu | Gly | Val | Cys | Ser | Leu | Ala | Glu | Gly | Leu | Lys | Lys |
| | | 915 | | | | | 920 | | | | | 925 | | | |
| Asn | Ser | Ser | Leu | Lys | Ile | Leu | Asn | Ile | Lys | Ile | His | Ala | Ser | Gly | Phe |
| | | 930 | | | | 935 | | | | | 940 | | | | |
| Asn | Lys | Leu | Leu | Glu | Ser | Ile | Phe | Cys | Ile | Leu | Leu | Val | Val | Glu | Ala |
| 945 | | | | | 950 | | | | 955 | | | | | 960 | |
| Phe | Phe | Leu | Gln | Lys | Val | Val | Lys | Ile | Leu | Glu | Glu | Met | Val | Val | Ser |
| | | | 965 | | | | | 970 | | | | | 975 | | |
| Trp | Leu | Glu | Val | Arg | Leu | Ser | Asn | Asn | Cys | Ile | Thr | Tyr | Leu | Gly | Ala |
| | | 980 | | | | | 985 | | | | | 990 | | | |
| Glu | Ala | Leu | Leu | Gln | Ala | Leu | Glu | Arg | Asn | Asp | Thr | Ile | Leu | Glu | Val |
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<211> 30

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<220>

<223> primer

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ccagaattca tggccgacaa ggtcctgaag 30

<210> 146
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<223> primer

<400> 146
ccactcgagc taatttccag gtatcggacc 30

<210> 147
<211> 20
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<220>
<223> primer

<400> 147
gaagacagtt acctggcaga 20

<210> 148
<211> 21
<212> DNA
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<220>
<223> primer

<400> 148
ttgtattctg aacatggcac c 21

<210> 149
<211> 36
<212> DNA
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<220>
<223> primer

<400> 149
gatcatcatc caggccgccc gtggtgacag ccctgg 36

<210> 150
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<212> DNA
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<220>
<223> primer

<400> 150
ccagggtgt caccacgggc ggcctggatg atgatc 36

<210> 151
<211> 26
<212> DNA
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<220>
<223> primer

<400> 151
cggaattcat ggccgacaag gtcctg 26

<210> 152
<211> 38
<212> DNA
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<220>
<223> primer

<400> 152
cgctcgagtt agtcttgcatttccaga 38

<210> 153
<211> 23
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<220>
<223> primer

<400> 153
catgtgaatg atccctctag cag 23

<210> 154
<211> 21
<212> DNA
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<220>
<223> primer

<400> 154
gggctcggct atcgtgctct a 21

<210> 155
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<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 155

acgatagccg agcccttatt c

21

<210> 156

<211> 21

<212> DNA

<213> Artificial Sequence

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<223> primer

<400> 156

gtatggaatg ttctgaatcg c

21

<210> 157

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 157

cccggatcca tgaatttcatt aaaggacaat agc

33

<210> 158

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 158

cccttcgaac aagtcctgaa atagaggata

30

<210> 159

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 159

ggtggagcag gatgctgcta gagg

24

<210> 160

<211> 29
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<220>
<223> primer

<400> 160
cacagtgggc caggctccga atgaagtca 29

<210> 161
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<212> DNA
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<220>
<223> primer

<400> 161
catcatttgc tgcgagaagg tggag 25

<210> 162
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<212> DNA
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<220>
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<400> 162
ttaacttgga taacacttgg ctaag 25

<210> 163
<211> 23
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<400> 163
gtaaacatca ttgctgcga gaa 23

<210> 164
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<400> 164
cccgggcagg tagaagatgc tat 23

<210> 165
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<212> DNA
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<220>
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<400> 165
aatttcataa aggacaatag ccgag 25

<210> 166
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<220>
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<400> 166
tgtctactgt acttttctaag ctggt 25

<210> 167
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(225)

<400> 167
gag agt act ccc tca gag atc ata gaa aga gaa aga aaa aag ttg ctt 48
Glu Ser Thr Pro Ser Glu Ile Ile Glu Arg Glu Arg Lys Lys Leu Leu
1 5 10 15

gaa atc ctt caa cat gat cct gat tct atc tta gac acg tta act tct 96
Glu Ile Leu Gln His Asp Pro Asp Ser Ile Leu Asp Thr Leu Thr Ser
20 25 30

cgg agg ctg att tct gag gaa gag tat gag act ctg gag aat gtt aca 144
Arg Arg Leu Ile Ser Glu Glu Glu Tyr Glu Thr Leu Glu Asn Val Thr
35 40 45

gat ctc ctg aag aaa agt cgg aag ctg tta att ttg gta cag aaa aag 192
Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val Gln Lys Lys
50 55 60

gga gag gcg acc tgt cag cat ttt ctc aag tgt 225
Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys
65 70 75

<210> 168
<211> 75
<212> PRT
<213> Homo sapiens

<400> 168
Glu Ser Thr Pro Ser Glu Ile Ile Glu Arg Glu Arg Lys Lys Leu Leu
1 5 10 15
Glu Ile Leu Gln His Asp Pro Asp Ser Ile Leu Asp Thr Leu Thr Ser
20 25 30
Arg Arg Leu Ile Ser Glu Glu Glu Tyr Glu Thr Leu Glu Asn Val Thr
35 40 45
Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val Gln Lys Lys
50 55 60
Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys
65 70 75

<210> 169
<211> 228
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(228)

<400> 169
atg tgc tcg cag gag gct ttt cag gca cag agg agc cag ctg gtc gag 48
Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu Val Glu
1 5 10 15

ctg ctg gtc tca ggg tcc ctg gaa ggc ttc gag agt gtc ctg gac tgg 96
Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu Asp Trp
20 25 30

ctg ctg tcc tgg gag gtc ctc tcc tgg gag gac tac gag ggc ttc cac 144
Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly Phe His
35 40 45

ctc ctg ggc cag cct ctc tcc cac ttg gcc agg cgc ctt ctg gac acc 192
Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu Asp Thr
50 55 60

gtc tgg aat aag ggt act tgg gcc tgt cag aag ctc 228
Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu
65 70 75

<210> 170
<211> 76
<212> PRT

<213> Homo sapiens

<400> 170

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Cys | Ser | Gln | Glu | Ala | Phe | Gln | Ala | Gln | Arg | Ser | Gln | Leu | Val | Glu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | | |
| Leu | Leu | Val | Ser | Gly | Ser | Leu | Glu | Gly | Phe | Glu | Ser | Val | Leu | Asp | Trp |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Leu | Ser | Trp | Glu | Val | Leu | Ser | Trp | Glu | Asp | Tyr | Glu | Gly | Phe | His |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Leu | Gly | Gln | Pro | Leu | Ser | His | Leu | Ala | Arg | Arg | Leu | Leu | Asp | Thr |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Val | Trp | Asn | Lys | Gly | Thr | Trp | Ala | Cys | Gln | Lys | Leu | | | | |
| 65 | | | | | 70 | | | | | 75 | | | | | |

<210> 171

<211> 243

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)...(243)

<400> 171

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| cca | gcc | cga | gac | ctg | cag | agt | cac | cgg | cca | gcc | att | gtc | agg | agg | ctc | 48 |
| Pro | Ala | Arg | Asp | Leu | Gln | Ser | His | Arg | Pro | Ala | Ile | Val | Arg | Arg | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| cac | agc | cat | gtg | gag | aac | atg | ctg | gac | ctg | gca | tgg | gag | cgg | ggg | ttc | 96 |
| His | Ser | His | Val | Glu | Asn | Met | Leu | Asp | Leu | Ala | Trp | Glu | Arg | Gly | Phe | |
| | | | 20 | | | | | 25 | | | | | | 30 | | |
| gtc | agc | cag | tat | gaa | tgt | gat | gaa | atc | agg | ttg | ccg | atc | ttc | aca | ccg | 144 |
| Val | Ser | Gln | Tyr | Glu | Cys | Asp | Glu | Ile | Arg | Leu | Pro | Ile | Phe | Thr | Pro | |
| | | 35 | | | | | 40 | | | | | | 45 | | | |
| tcc | cag | agg | gca | aga | agg | ctg | ctt | gat | ctt | gcc | acg | gtg | aaa | gcg | aat | 192 |
| Ser | Gln | Arg | Ala | Arg | Arg | Leu | Leu | Asp | Leu | Ala | Thr | Val | Lys | Ala | Asn | |
| | 50 | | | | | 55 | | | | 60 | | | | | | |
| gga | ttg | gct | gcc | ttc | ctt | cta | caa | cat | gtt | cag | gaa | tta | cca | gtc | cca | 240 |
| Gly | Leu | Ala | Ala | Phe | Leu | Leu | Gln | His | Val | Gln | Glu | Leu | Pro | Val | Pro | |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | | |
| ttg | | | | | | | | | | | | | | | | 243 |
| Leu | | | | | | | | | | | | | | | | |

<210> 172

<211> 81

<212> PRT

<213> Homo sapiens

<400> 172

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Pro Ala Arg Asp Leu Gln Ser His Arg Pro Ala Ile Val Arg Arg Leu
 1           5           10           15
His Ser His Val Glu Asn Met Leu Asp Leu Ala Trp Glu Arg Gly Phe
      20           25           30
Val Ser Gln Tyr Glu Cys Asp Glu Ile Arg Leu Pro Ile Phe Thr Pro
      35           40           45
Ser Gln Arg Ala Arg Arg Leu Leu Asp Leu Ala Thr Val Lys Ala Asn
      50           55           60
Gly Leu Ala Ala Phe Leu Leu Gln His Val Gln Glu Leu Pro Val Pro
65           70           75           80
Leu
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<210> 173

<211> 888

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1) ... (888)

<400> 173

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gac gat gcg gac act gtg ctg gtg gtg ggt gag gcg ggc agt ggc aag      48
Asp Asp Ala Asp Thr Val Leu Val Val Gly Glu Ala Gly Ser Gly Lys
 1           5           10           15

agc acg ctc ctg cag cgg ctg cac ttg ctg tgg gct gca ggg caa gac      96
Ser Thr Leu Leu Gln Arg Leu His Leu Leu Trp Ala Ala Gly Gln Asp
      20           25           30

ttc cag gaa ttt ctc ttt gtc ttc cca ttc agc tgc cgg cag ctg cag      144
Phe Gln Glu Phe Leu Phe Val Phe Pro Phe Ser Cys Arg Gln Leu Gln
      35           40           45

tgc atg gcc aaa cca ctc tct gtg cgg act cta ctc ttt gag cac tgc      192
Cys Met Ala Lys Pro Leu Ser Val Arg Thr Leu Leu Phe Glu His Cys
      50           55           60

tgt tgg cct gat gtt ggt caa gaa gac atc ttc cag tta ctc ctt gac      240
Cys Trp Pro Asp Val Gly Gln Glu Asp Ile Phe Gln Leu Leu Leu Asp
      65           70           75           80

cac cct gac cgt gtc ctg tta acc ttt gat ggc ttt gac gag ttc aag      288
His Pro Asp Arg Val Leu Leu Thr Phe Asp Gly Phe Asp Glu Phe Lys
      85           90           95

ttc agg ttc acg gat cgt gaa cgc cac tgc tcc ccg acc gac ccc acc      336
Phe Arg Phe Thr Asp Arg Glu Arg His Cys Ser Pro Thr Asp Pro Thr
```

| 100 | 105 | 110 | |
|---|-----|-----|-----|
| tct gtc cag acc ctg ctc ttc aac ctt ctg cag ggc aac ctg ctg aag | | | 384 |
| Ser Val Gln Thr Leu Leu Phe Asn Leu Leu Gln Gly Asn Leu Leu Lys | | | |
| 115 | 120 | 125 | |
| aat gcc cgc aag gtg gtg acc agc cgt ccg gcc gct gtg tcg gcg ttc | | | 432 |
| Asn Ala Arg Lys Val Val Thr Ser Arg Pro Ala Ala Val Ser Ala Phe | | | |
| 130 | 135 | 140 | |
| ctc agg aag tac atc cgc acc gag ttc aac ctc aag ggc ttc tct gaa | | | 480 |
| Leu Arg Lys Tyr Ile Arg Thr Glu Phe Asn Leu Lys Gly Phe Ser Glu | | | |
| 145 | 150 | 155 | 160 |
| cag ggc atc gag ctg tac ctg agg aag cgc cat cat gag ccc ggg gtg | | | 528 |
| Gln Gly Ile Glu Leu Tyr Leu Arg Lys Arg His His Glu Pro Gly Val | | | |
| 165 | 170 | 175 | |
| gcg gac cgc ctc atc cgc ctg ctc caa gag acc tca gcc ctg cac ggt | | | 576 |
| Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser Ala Leu His Gly | | | |
| 180 | 185 | 190 | |
| ttg tgc cac ctg cct gtc ttc tca tgg atg gtg tcc aaa tgc cac cag | | | 624 |
| Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser Lys Cys His Gln | | | |
| 195 | 200 | 205 | |
| gaa ctg ttg ctg cag gag ggg ggg tcc cca aag acc act aca gat atg | | | 672 |
| Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr Thr Thr Asp Met | | | |
| 210 | 215 | 220 | |
| tac ctg ctg att ctg cag cat ttt ctg ctg cat gcc acc ccc cca gac | | | 720 |
| Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala Thr Pro Pro Asp | | | |
| 225 | 230 | 235 | 240 |
| tca gct tcc caa ggt ctg gga ccc agt ctt ctt cgg ggc cgc ctc ccc | | | 768 |
| Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg Gly Arg Leu Pro | | | |
| 245 | 250 | 255 | |
| acc ctc ctg cac ctg ggc aga ctg gct ctg tgg ggc ctg ggc atg tgc | | | 816 |
| Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly Leu Gly Met Cys | | | |
| 260 | 265 | 270 | |
| tgc tac gtg ttc tca gcc cag cag ctc cag gca gca cag gtc agc cct | | | 864 |
| Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala Gln Val Ser Pro | | | |
| 275 | 280 | 285 | |
| gat gac att tct ctt ggc ttc ctg | | | 888 |
| Asp Asp Ile Ser Leu Gly Phe Leu | | | |
| 290 | 295 | | |

<210> 174

<211> 296

<212> PRT

<213> Homo sapiens

<400> 174

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asp | Ala | Asp | Thr | Val | Leu | Val | Val | Gly | Glu | Ala | Gly | Ser | Gly | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Thr | Leu | Leu | Gln | Arg | Leu | His | Leu | Leu | Trp | Ala | Ala | Gly | Gln | Asp |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Phe | Gln | Glu | Phe | Leu | Phe | Val | Phe | Pro | Phe | Ser | Cys | Arg | Gln | Leu | Gln |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Cys | Met | Ala | Lys | Pro | Leu | Ser | Val | Arg | Thr | Leu | Leu | Phe | Glu | His | Cys |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Cys | Trp | Pro | Asp | Val | Gly | Gln | Glu | Asp | Ile | Phe | Gln | Leu | Leu | Leu | Asp |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| His | Pro | Asp | Arg | Val | Leu | Leu | Thr | Phe | Asp | Gly | Phe | Asp | Glu | Phe | Lys |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Phe | Arg | Phe | Thr | Asp | Arg | Glu | Arg | His | Cys | Ser | Pro | Thr | Asp | Pro | Thr |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ser | Val | Gln | Thr | Leu | Leu | Phe | Asn | Leu | Leu | Gln | Gly | Asn | Leu | Leu | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asn | Ala | Arg | Lys | Val | Val | Thr | Ser | Arg | Pro | Ala | Ala | Val | Ser | Ala | Phe |
| | 130 | | | | | 135 | | | | 140 | | | | | |
| Leu | Arg | Lys | Tyr | Ile | Arg | Thr | Glu | Phe | Asn | Leu | Lys | Gly | Phe | Ser | Glu |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Gln | Gly | Ile | Glu | Leu | Tyr | Leu | Arg | Lys | Arg | His | His | Glu | Pro | Gly | Val |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Ala | Asp | Arg | Leu | Ile | Arg | Leu | Leu | Gln | Glu | Thr | Ser | Ala | Leu | His | Gly |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Cys | His | Leu | Pro | Val | Phe | Ser | Trp | Met | Val | Ser | Lys | Cys | His | Gln |
| | 195 | | | | | 200 | | | | | | 205 | | | |
| Glu | Leu | Leu | Leu | Gln | Glu | Gly | Gly | Ser | Pro | Lys | Thr | Thr | Thr | Asp | Met |
| | 210 | | | | 215 | | | | | | 220 | | | | |
| Tyr | Leu | Leu | Ile | Leu | Gln | His | Phe | Leu | Leu | His | Ala | Thr | Pro | Pro | Asp |
| 225 | | | | 230 | | | | | | 235 | | | | 240 | |
| Ser | Ala | Ser | Gln | Gly | Leu | Gly | Pro | Ser | Leu | Leu | Arg | Gly | Arg | Leu | Pro |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Thr | Leu | Leu | His | Leu | Gly | Arg | Leu | Ala | Leu | Trp | Gly | Leu | Gly | Met | Cys |
| | | | 260 | | | | 265 | | | | | | 270 | | |
| Cys | Tyr | Val | Phe | Ser | Ala | Gln | Gln | Leu | Gln | Ala | Ala | Gln | Val | Ser | Pro |
| | | 275 | | | | 280 | | | | | | 285 | | | |
| Asp | Asp | Ile | Ser | Leu | Gly | Phe | Leu | | | | | | | | |
| | 290 | | | | | 295 | | | | | | | | | |

<210> 175

<211> 1209

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)...(1209)

<400> 175

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| gag ccc ggg gtg gcg gac cgc ctc atc cgc ctg ctc caa gag acc tca | 48 |
| Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser | |
| 1 5 10 15 | |
| gcc ctg cac ggt ttg tgc cac ctg cct gtc ttc tca tgg atg gtg tcc | 96 |
| Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser | |
| 20 25 30 | |
| aaa tgc cac cag gaa ctg ttg ctg cag gag ggg ggg tcc cca aag acc | 144 |
| Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr | |
| 35 40 45 | |
| act aca gat atg tac ctg ctg att ctg cag cat ttt ctg ctg cat gcc | 192 |
| Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala | |
| 50 55 60 | |
| acc ccc cca gac tca gct tcc caa ggt ctg gga ccc agt ctt ctt cgg | 240 |
| Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg | |
| 65 70 75 80 | |
| ggc cgc ctc ccc acc ctc ctg cac ctg ggc aga ctg gct ctg tgg ggc | 288 |
| Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly | |
| 85 90 95 | |
| ctg ggc atg tgc tgc tac gtg ttc tca gcc cag cag ctc cag gca gca | 336 |
| Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala | |
| 100 105 110 | |
| cag gtc agc cct gat gac att tct ctt ggc ttc ctg gtg cgt gcc aaa | 384 |
| Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu Val Arg Ala Lys | |
| 115 120 125 | |
| ggc gtc gtg cca ggg agt acg gcg ccc ctg gaa ttc ctt cac atc act | 432 |
| Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe Leu His Ile Thr | |
| 130 135 140 | |
| ttc cag tgc ttc ttt gcc gcg ttc tac ctg gca ctc agt gct gat gtg | 480 |
| Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu Ser Ala Asp Val | |
| 145 150 155 160 | |
| cca cca gct ttg ctc aga cac ctc ttc aat tgt ggc agg cca ggc aac | 528 |
| Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly Arg Pro Gly Asn | |
| 165 170 175 | |
| tca cca atg gcc agg ctc ctg ccc acg atg tgc atc cag gcc tcg gag | 576 |
| Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile Gln Ala Ser Glu | |
| 180 185 190 | |
| gga aag gac agc agc gtg gca gct ttg ctg cag aag gcc gag ccg cac | 624 |
| Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys Ala Glu Pro His | |
| 195 200 205 | |

| | |
|---|------|
| aac ctt cag atc aca gca gcc ttc ctg gca ggg ctg ttg tcc cgg gag | 672 |
| Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu Leu Ser Arg Glu | |
| 210 215 220 | |
| cac tgg ggc ctg ctg gct gag tgc cag aca tct gag aag gcc ctg ctc | 720 |
| His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu Lys Ala Leu Leu | |
| 225 230 235 240 | |
| cgg cgc cag gcc tgt gcc cgc tgg tgt ctg gcc cgc agc ctc cgc aag | 768 |
| Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg Ser Leu Arg Lys | |
| 245 250 255 | |
| cac ttc cac tcc atc ccg cca gct gca ccg ggt gag gcc aag agc gtg | 816 |
| His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu Ala Lys Ser Val | |
| 260 265 270 | |
| cat gcc atg ccc ggg ttc atc tgg ctc atc cgg agc ctg tac gag atg | 864 |
| His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met | |
| 275 280 285 | |
| cag gag gag cgg ctg gct cgg aag gct gca cgt ggc ctg aat gtt ggg | 912 |
| Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly Leu Asn Val Gly | |
| 290 295 300 | |
| cac ctc aag ttg aca ttt tgc agt gtg ggc ccc act gag tgt gct gcc | 960 |
| His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr Glu Cys Ala Ala | |
| 305 310 315 320 | |
| ctg gcc ttt gtg ctg cag cac ctc cgg cgg ccc gtg gcc ctg cag ctg | 1008 |
| Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val Ala Leu Gln Leu | |
| 325 330 335 | |
| gac tac aac tct gtg ggt gac att ggc gtg gag cag ctg ctg cct tgc | 1056 |
| Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln Leu Leu Pro Cys | |
| 340 345 350 | |
| ctt ggt gtc tgc aag gct ctg tat ttg cgc gat aac aat atc tca gac | 1104 |
| Leu Gly Val Cys Lys Ala Leu Tyr Leu Arg Asp Asn Asn Ile Ser Asp | |
| 355 360 365 | |
| cga ggc atc tgc aag ctc att gaa tgt gct ctt cac tgc gag caa ttg | 1152 |
| Arg Gly Ile Cys Lys Leu Ile Glu Cys Ala Leu His Cys Glu Gln Leu | |
| 370 375 380 | |
| cag aag tta gcg ctg ggg aat aac tac atc act gcc gcg gga gcc caa | 1200 |
| Gln Lys Leu Ala Leu Gly Asn Asn Tyr Ile Thr Ala Ala Gly Ala Gln | |
| 385 390 395 400 | |
| gtg ctg gcc | 1209 |
| Val Leu Ala | |

<210> 176
<211> 403
<212> PRT
<213> Homo sapiens

<400> 176

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Gly | Val | Ala | Asp | Arg | Leu | Ile | Arg | Leu | Leu | Gln | Glu | Thr | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Leu | His | Gly | Leu | Cys | His | Leu | Pro | Val | Phe | Ser | Trp | Met | Val | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Lys | Cys | His | Gln | Glu | Leu | Leu | Leu | Gln | Glu | Gly | Gly | Ser | Pro | Lys | Thr |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Thr | Thr | Asp | Met | Tyr | Leu | Leu | Ile | Leu | Gln | His | Phe | Leu | Leu | His | Ala |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Thr | Pro | Pro | Asp | Ser | Ala | Ser | Gln | Gly | Leu | Gly | Pro | Ser | Leu | Leu | Arg |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Gly | Arg | Leu | Pro | Thr | Leu | Leu | His | Leu | Gly | Arg | Leu | Ala | Leu | Trp | Gly |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Leu | Gly | Met | Cys | Cys | Tyr | Val | Phe | Ser | Ala | Gln | Gln | Leu | Gln | Ala | Ala |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Gln | Val | Ser | Pro | Asp | Asp | Ile | Ser | Leu | Gly | Phe | Leu | Val | Arg | Ala | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gly | Val | Val | Pro | Gly | Ser | Thr | Ala | Pro | Leu | Glu | Phe | Leu | His | Ile | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Phe | Gln | Cys | Phe | Phe | Ala | Ala | Phe | Tyr | Leu | Ala | Leu | Ser | Ala | Asp | Val |
| 145 | | | | | 150 | | | | 155 | | | | | | 160 |
| Pro | Pro | Ala | Leu | Leu | Arg | His | Leu | Phe | Asn | Cys | Gly | Arg | Pro | Gly | Asn |
| | | | | 165 | | | | 170 | | | | | | 175 | |
| Ser | Pro | Met | Ala | Arg | Leu | Leu | Pro | Thr | Met | Cys | Ile | Gln | Ala | Ser | Glu |
| | | 180 | | | | | 185 | | | | | 190 | | | |
| Gly | Lys | Asp | Ser | Ser | Val | Ala | Ala | Leu | Leu | Gln | Lys | Ala | Glu | Pro | His |
| | 195 | | | | | 200 | | | | | | 205 | | | |
| Asn | Leu | Gln | Ile | Thr | Ala | Ala | Phe | Leu | Ala | Gly | Leu | Leu | Ser | Arg | Glu |
| | 210 | | | | 215 | | | | | 220 | | | | | |
| His | Trp | Gly | Leu | Leu | Ala | Glu | Cys | Gln | Thr | Ser | Glu | Lys | Ala | Leu | Leu |
| 225 | | | | | 230 | | | | 235 | | | | | | 240 |
| Arg | Arg | Gln | Ala | Cys | Ala | Arg | Trp | Cys | Leu | Ala | Arg | Ser | Leu | Arg | Lys |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| His | Phe | His | Ser | Ile | Pro | Pro | Ala | Ala | Pro | Gly | Glu | Ala | Lys | Ser | Val |
| | | 260 | | | | | 265 | | | | | | 270 | | |
| His | Ala | Met | Pro | Gly | Phe | Ile | Trp | Leu | Ile | Arg | Ser | Leu | Tyr | Glu | Met |
| | 275 | | | | | 280 | | | | | 285 | | | | |
| Gln | Glu | Glu | Arg | Leu | Ala | Arg | Lys | Ala | Ala | Arg | Gly | Leu | Asn | Val | Gly |
| | 290 | | | | 295 | | | | | 300 | | | | | |
| His | Leu | Lys | Leu | Thr | Phe | Cys | Ser | Val | Gly | Pro | Thr | Glu | Cys | Ala | Ala |
| 305 | | | | | 310 | | | | 315 | | | | | | 320 |
| Leu | Ala | Phe | Val | Leu | Gln | His | Leu | Arg | Arg | Pro | Val | Ala | Leu | Gln | Leu |
| | | | 325 | | | | | 330 | | | | | | 335 | |
| Asp | Tyr | Asn | Ser | Val | Gly | Asp | Ile | Gly | Val | Glu | Gln | Leu | Leu | Pro | Cys |
| | | 340 | | | | 345 | | | | | | 350 | | | |
| Leu | Gly | Val | Cys | Lys | Ala | Leu | Tyr | Leu | Arg | Asp | Asn | Asn | Ile | Ser | Asp |
| | 355 | | | | | 360 | | | | | 365 | | | | |
| Arg | Gly | Ile | Cys | Lys | Leu | Ile | Glu | Cys | Ala | Leu | His | Cys | Glu | Gln | Leu |

| | | |
|---|-----|-----|
| 370 | 375 | 380 |
| Gln Lys Leu Ala Leu Gly Asn Asn Tyr Ile Thr Ala Ala Gly Ala Gln | | |
| 385 | 390 | 395 |
| Val Leu Ala | | 400 |

<210> 177
 <211> 261
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(261)

| | |
|---|-----|
| <400> 177 | |
| atg aat ttc ata aag gac aat agc cga gcc ctt att caa aga atg gga | 48 |
| Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly | |
| 1 5 10 15 | |
| atg act gtt ata aag caa atc aca gat gac cta ttt gta tgg aat gtt | 96 |
| Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val | |
| 20 25 30 | |
| ctg aat cgc gaa gaa gta aac atc att tgc tgc gag aag gtg gag cag | 144 |
| Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln | |
| 35 40 45 | |
| gat gct gct aga ggg atc att cac atg att ttg aaa aag ggt tca gag | 192 |
| Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu | |
| 50 55 60 | |
| tcc tgt aac ctc ttt ctt aaa tcc ctt aag gag tgg aac tat cct cta | 240 |
| Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu | |
| 65 70 75 80 | |
| ttt cag gac ttg aat gga caa | 261 |
| Phe Gln Asp Leu Asn Gly Gln | |
| 85 | |

<210> 178
 <211> 87
 <212> PRT
 <213> Homo sapiens

| | |
|---|--|
| <400> 178 | |
| Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly | |
| 1 5 10 15 | |
| Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val | |
| 20 25 30 | |
| Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 35 | 40 | 45 | | | | | | | | | | | | | |
| Asp | Ala | Ala | Arg | Gly | Ile | Ile | His | Met | Ile | Leu | Lys | Lys | Gly | Ser | Glu |
| 50 | | | | | | 55 | | | | | 60 | | | | |
| Ser | Cys | Asn | Leu | Phe | Leu | Lys | Ser | Leu | Lys | Glu | Trp | Asn | Tyr | Pro | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Phe | Gln | Asp | Leu | Asn | Gly | Gln | | | | | | | | | |
| | | | | 85 | | | | | | | | | | | |

<210> 179
<211> 891
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(891)

| | |
|---|-----|
| <400> 179 | |
| ctt cag agc ccc tgc atc att gaa ggg gaa tct ggc aaa ggc aag tcc | 48 |
| Leu Gln Ser Pro Cys Ile Ile Glu Gly Glu Ser Gly Lys Gly Lys Ser | |
| 1 5 10 15 | |
| act ctg ctg cag cgc att gcc atg ctc tgg ggc tcc gga aag tgc aag | 96 |
| Thr Leu Leu Gln Arg Ile Ala Met Leu Trp Gly Ser Gly Lys Cys Lys | |
| 20 25 30 | |
| gct ctg acc aag ttc aaa ttc gtc ttc ttc ctc cgt ctc agc agg gcc | 144 |
| Ala Leu Thr Lys Phe Lys Phe Val Phe Phe Leu Arg Leu Ser Arg Ala | |
| 35 40 45 | |
| cag ggt gga ctt ttt gaa acc ctc tgt gat caa ctc ctg gat ata cct | 192 |
| Gln Gly Gly Leu Phe Glu Thr Leu Cys Asp Gln Leu Leu Asp Ile Pro | |
| 50 55 60 | |
| ggc aca atc agg aag cag aca ttc atg gcc atg ctg ctg aag ctg cgg | 240 |
| Gly Thr Ile Arg Lys Gln Thr Phe Met Ala Met Leu Leu Lys Leu Arg | |
| 65 70 75 80 | |
| cag agg gtt ctt ttc ctt ctt gat ggc tac aat gaa ttc aag ccc cag | 288 |
| Gln Arg Val Leu Phe Leu Leu Asp Gly Tyr Asn Glu Phe Lys Pro Gln | |
| 85 90 95 | |
| aac tgc cca gaa atc gaa gcc ctg ata aag gaa aac cac cgc ttc aag | 336 |
| Asn Cys Pro Glu Ile Glu Ala Leu Ile Lys Glu Asn His Arg Phe Lys | |
| 100 105 110 | |
| aac atg gtc atc gtc acc act acc act gag tgc ctg agg cac ata cgg | 384 |
| Asn Met Val Ile Val Thr Thr Thr Thr Glu Cys Leu Arg His Ile Arg | |
| 115 120 125 | |
| cag ttt ggt gcc ctg act gct gag gtg ggg gat atg aca gaa gac agc | 432 |
| Gln Phe Gly Ala Leu Thr Ala Glu Val Gly Asp Met Thr Glu Asp Ser | |

| 130 | 135 | 140 | |
|---|-----|-----|-----|
| gcc cag gct ctc atc cga gaa gtg ctg atc aag gag ctt gct gaa ggc | | | 480 |
| Ala Gln Ala Leu Ile Arg Glu Val Leu Ile Lys Glu Leu Ala Glu Gly | | | |
| 145 | 150 | 155 | 160 |
| ttg ttg ctc caa att cag aaa tcc agg tgc ttg agg aat ctc atg aag | | | 528 |
| Leu Leu Leu Gln Ile Gln Lys Ser Arg Cys Leu Arg Asn Leu Met Lys | | | |
| | 165 | 170 | 175 |
| acc cct ctc ttt gtg gtc atc act tgt gca atc cag atg ggt gaa agt | | | 576 |
| Thr Pro Leu Phe Val Val Ile Thr Cys Ala Ile Gln Met Gly Glu Ser | | | |
| | 180 | 185 | 190 |
| gag ttc cac tct cac aca caa aca acg ctg ttc cat acc ttc tat gat | | | 624 |
| Glu Phe His Ser His Thr Gln Thr Thr Leu Phe His Thr Phe Tyr Asp | | | |
| | 195 | 200 | 205 |
| ctg ttg ata cag aaa aac aaa cac aaa cat aaa ggt gtg gct gca agt | | | 672 |
| Leu Leu Ile Gln Lys Asn Lys His Lys His Lys Gly Val Ala Ala Ser | | | |
| | 210 | 215 | 220 |
| gac ttc att cgg agc ctg gac cac cgt gga gac cta gct ctg gag ggt | | | 720 |
| Asp Phe Ile Arg Ser Leu Asp His Arg Gly Asp Leu Ala Leu Glu Gly | | | |
| | 225 | 230 | 235 |
| gtg ttc tcc cac aag ttt gat ttc gaa ctg cag gat gtg tcc agc gtg | | | 768 |
| Val Phe Ser His Lys Phe Asp Phe Glu Leu Gln Asp Val Ser Ser Val | | | |
| | 245 | 250 | 255 |
| aat gag gat gtc ctg ctg aca act ggg ctc ctc tgt aaa tat aca gct | | | 816 |
| Asn Glu Asp Val Leu Leu Thr Thr Gly Leu Leu Cys Lys Tyr Thr Ala | | | |
| | 260 | 265 | 270 |
| caa agg ttc aag cca aag tat aaa ttc ttt cac aag tca ttc cag gag | | | 864 |
| Gln Arg Phe Lys Pro Lys Tyr Lys Phe Phe His Lys Ser Phe Gln Glu | | | |
| | 275 | 280 | 285 |
| tac aca gca gga cga aga ctc agc agt | | | 891 |
| Tyr Thr Ala Gly Arg Arg Leu Ser Ser | | | |
| | 290 | 295 | |

<210> 180
 <211> 297
 <212> PRT
 <213> Homo sapiens

<400> 180
 Leu Gln Ser Pro Cys Ile Ile Glu Gly Glu Ser Gly Lys Gly Lys Ser
 1 5 10 15
 Thr Leu Leu Gln Arg Ile Ala Met Leu Trp Gly Ser Gly Lys Cys Lys
 20 25 30

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Thr | Lys | Phe | Lys | Phe | Val | Phe | Phe | Leu | Arg | Leu | Ser | Arg | Ala |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Gln | Gly | Gly | Leu | Phe | Glu | Thr | Leu | Cys | Asp | Gln | Leu | Leu | Asp | Ile | Pro |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Gly | Thr | Ile | Arg | Lys | Gln | Thr | Phe | Met | Ala | Met | Leu | Leu | Lys | Leu | Arg |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Gln | Arg | Val | Leu | Phe | Leu | Leu | Asp | Gly | Tyr | Asn | Glu | Phe | Lys | Pro | Gln |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Asn | Cys | Pro | Glu | Ile | Glu | Ala | Leu | Ile | Lys | Glu | Asn | His | Arg | Phe | Lys |
| | | | 100 | | | | | | 105 | | | | 110 | | |
| Asn | Met | Val | Ile | Val | Thr | Thr | Thr | Thr | Glu | Cys | Leu | Arg | His | Ile | Arg |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Gln | Phe | Gly | Ala | Leu | Thr | Ala | Glu | Val | Gly | Asp | Met | Thr | Glu | Asp | Ser |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ala | Gln | Ala | Leu | Ile | Arg | Glu | Val | Leu | Ile | Lys | Glu | Leu | Ala | Glu | Gly |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Leu | Leu | Leu | Gln | Ile | Gln | Lys | Ser | Arg | Cys | Leu | Arg | Asn | Leu | Met | Lys |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Thr | Pro | Leu | Phe | Val | Val | Ile | Thr | Cys | Ala | Ile | Gln | Met | Gly | Glu | Ser |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Glu | Phe | His | Ser | His | Thr | Gln | Thr | Thr | Leu | Phe | His | Thr | Phe | Tyr | Asp |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Leu | Leu | Ile | Gln | Lys | Asn | Lys | His | Lys | His | Lys | Gly | Val | Ala | Ala | Ser |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Asp | Phe | Ile | Arg | Ser | Leu | Asp | His | Arg | Gly | Asp | Leu | Ala | Leu | Glu | Gly |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Phe | Ser | His | Lys | Phe | Asp | Phe | Glu | Leu | Gln | Asp | Val | Ser | Ser | Val |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Asn | Glu | Asp | Val | Leu | Leu | Thr | Thr | Gly | Leu | Leu | Cys | Lys | Tyr | Thr | Ala |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Gln | Arg | Phe | Lys | Pro | Lys | Tyr | Lys | Phe | Phe | His | Lys | Ser | Phe | Gln | Glu |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Tyr | Thr | Ala | Gly | Arg | Arg | Leu | Ser | Ser | | | | | | | |
| | 290 | | | | | 295 | | | | | | | | | |

<210> 181
 <211> 618
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(618)

| | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| <400> 181 | | | | | | | | | | | | | | | | |
| ggt | aac | ttg | aag | aac | ctt | aca | aag | ctc | ata | atg | gat | aac | ata | aag | atg | 48 |
| Gly | Asn | Leu | Lys | Asn | Leu | Thr | Lys | Leu | Ile | Met | Asp | Asn | Ile | Lys | Met | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| aat gaa gaa gat gct ata aaa cta gct gaa ggc ctg aaa aac ctg aag | | | | | | | | | | | | | | | 96 | |
| Asn | Glu | Glu | Asp | Ala | Ile | Lys | Leu | Ala | Glu | Gly | Leu | Lys | Asn | Leu | Lys | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |

| | |
|---|-----|
| aag atg tgt tta ttt cat ttg acc cac ttg tct gac att gga gag gga | 144 |
| Lys Met Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu Gly | |
| 35 40 45 | |
| atg gat tac ata gtc aag tct ctg tca agt gaa ccc tgt gac ctt gaa | 192 |
| Met Asp Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu Glu | |
| 50 55 60 | |
| gaa att caa tta gtc tcc tgc tgc ttg tct gca aat gca gtg aaa atc | 240 |
| Glu Ile Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys Ile | |
| 65 70 75 80 | |
| cta gct cag aat ctt cac aat ttg gtc aaa ctg agc att ctt gat tta | 288 |
| Leu Ala Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp Leu | |
| 85 90 95 | |
| tca gaa aat tac ctg gaa aaa gat gga aat gaa gct ctt cat gaa ctg | 336 |
| Ser Glu Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu Leu | |
| 100 105 110 | |
| atc gac agg atg aac gtg cta gaa cag ctc acc gca ctg atg ctg ccc | 384 |
| Ile Asp Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu Pro | |
| 115 120 125 | |
| tgg ggc tgt gac gtg caa ggc agc ctg agc agc ctg ttg aaa cat ttg | 432 |
| Trp Gly Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His Leu | |
| 130 135 140 | |
| gag gag gtc cca caa ctc gtc aag ctt ggg ttg aaa aac tgg aga ctc | 480 |
| Glu Glu Val Pro Gln Leu Val Lys Leu Gly Leu Lys Asn Trp Arg Leu | |
| 145 150 155 160 | |
| aca gat aca gag att aga att tta ggt gca ttt ttt gga aag aac cct | 528 |
| Thr Asp Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn Pro | |
| 165 170 175 | |
| ctg aaa aac ttc cag cag ttg aat ttg gcg gga aat cgt gtg agc agt | 576 |
| Leu Lys Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser Ser | |
| 180 185 190 | |
| gat gga tgg ctt gcc ttc atg ggt gta ttt gag aat ctt aag | 618 |
| Asp Gly Trp Leu Ala Phe Met Gly Val Phe Glu Asn Leu Lys | |
| 195 200 205 | |

<210> 182
 <211> 206
 <212> PRT
 <213> Homo sapiens

<400> 182

| | | | | | | | | | | | | | | | |
|---------|-----|-----|-----|---------|-----|-----|-----|-----|--------|-----|-----|-----|--------|--------|-----|
| Gly 1 | Asn | Leu | Lys | Asn 5 | Leu | Thr | Lys | Leu | Ile 10 | Met | Asp | Asn | Ile | Lys 15 | Met |
| Asn | Glu | Glu | Asp | Ala 20 | Ile | Lys | Leu | Ala | Glu | Gly | Leu | Lys | Asn 30 | Leu | Lys |
| Lys | Met | Cys | Leu | Phe 35 | His | Leu | Thr | His | Leu | Ser | Asp | Ile | Gly | Glu | Gly |
| Met | Asp | Tyr | Ile | Val 50 | Lys | Ser | Leu | Ser | Ser | Glu | Pro | Cys | Asp | Leu | Glu |
| Glu 65 | Ile | Gln | Leu | Val 70 | Ser | Cys | Cys | Leu | Ser | Ala | Asn | Ala | Val | Lys | Ile |
| Leu | Ala | Gln | Asn | Leu 85 | His | Asn | Leu | Val | Lys | Leu | Ser | Ile | Leu | Asp | Leu |
| Ser | Glu | Asn | Tyr | Leu 100 | Glu | Lys | Asp | Gly | Asn | Glu | Ala | Leu | His | Glu | Leu |
| Ile | Asp | Arg | Met | Asn 115 | Val | Leu | Glu | Gln | Leu | Thr | Ala | Leu | Met | Leu | Pro |
| Trp | Gly | Cys | Asp | Val 130 | Gln | Gly | Ser | Leu | Ser | Ser | Leu | Leu | Lys | His | Leu |
| Glu 145 | Glu | Val | Pro | Gln 150 | Leu | Val | Lys | Leu | Gly | Leu | Lys | Asn | Trp | Arg | Leu |
| Thr | Asp | Thr | Glu | Ile 165 | Arg | Ile | Leu | Gly | Ala | Phe | Phe | Gly | Lys | Asn | Pro |
| Leu | Lys | Asn | Phe | Gln 180 | Gln | Leu | Asn | Leu | Ala | Gly | Asn | Arg | Val | Ser | Ser |
| Asp | Gly | Trp | Leu | Ala 195 | Phe | Met | Gly | Val | Phe | Glu | Asn | Leu | Lys | | |

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<210> 183
<211> 165
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> '(1) ... (165)'
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<400> 183
acc tac att ccc agc agg gct gta tct ttg ttc ttc aac tgg aag cag      48
Thr Tyr Ile Pro Ser Arg Ala Val Ser Leu Phe Phe Asn Trp Lys Gln
      1              5              10              15

gaa ttc agg act ctg gag gtc aca ctc cgg gat ttc agc aag ttg aat      96
Glu Phe Arg Thr Leu Glu Val Thr Leu Arg Asp Phe Ser Lys Leu Asn
      20              25              30

aag caa gat atc aga tat ctg ggg aaa ata ttc agc tct gcc aca agc      144
Lys Gln Asp Ile Arg Tyr Leu Gly Lys Ile Phe Ser Ser Ala Thr Ser
      35              40              45

ctc agg ctg caa ata aag aga      165
Leu Arg Leu Gln Ile Lys Arg
      50              55

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<210> 184
<211> 55
<212> PRT
<213> Homo sapiens

<400> 184
Thr Tyr Ile Pro Ser Arg Ala Val Ser Leu Phe Phe Asn Trp Lys Gln
1 5 10 15
Glu Phe Arg Thr Leu Glu Val Thr Leu Arg Asp Phe Ser Lys Leu Asn
20 25 30
Lys Gln Asp Ile Arg Tyr Leu Gly Lys Ile Phe Ser Ser Ala Thr Ser
35 40 45
Leu Arg Leu Gln Ile Lys Arg
50 55

<210> 185
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 185
gaaatgtgct cgcaggagg 19

<210> 186
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 186
gatgagcttc tgacaggccc 20

<210> 187
<211> 3063
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1) ... (2385)

<221> CDS
<222> (2389) ... (2928)

<400> 187

| | |
|---|-----|
| tgt gaa atg tgc tcg cag gag gct ttt cag gca cag agg agc cag ctg | 48 |
| Cys Glu Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu | |
| 1 5 10 15 | |
| gtc gag ctg ctg gtc tca ggg tcc ctg gaa ggc ttc gag agt gtc ctg | 96 |
| Val Glu Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu | |
| 20 25 30 | |
| gac tgg ctg ctg tcc tgg gag gtc ctc tcc tgg gag gac tac gag ggc | 144 |
| Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly | |
| 35 40 45 | |
| ttc cac ctc ctg ggc cag cct ctc tcc cac ttg gcc agg cgc ctt ctg | 192 |
| Phe His Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu | |
| 50 55 60 | |
| gac acc gtc tgg aat aag ggt act tgg gcc tgt cag aag ctc atc gcg | 240 |
| Asp Thr Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala | |
| 65 70 75 80 | |
| gct gcc caa gaa gcc cag gcc gac agc cag tcc ccc aag ctg cat ggc | 288 |
| Ala Ala Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly | |
| 85 90 95 | |
| tgc tgg gac ccc cac tcg ctc cac cca gcc cga gac ctg cag agt cac | 336 |
| Cys Trp Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His | |
| 100 105 110 | |
| cgg cca gcc att gtc agg agg ctc cac agc cat gtg gag aac atg ctg | 384 |
| Arg Pro Ala Ile Val Arg Arg Leu His Ser His Val Glu Asn Met Leu | |
| 115 120 125 | |
| gac ctg gca tgg gag cgg ggt ttc gtc agc cag tat gaa tgt gat gaa | 432 |
| Asp Leu Ala Trp Glu Arg Gly Phe Val Ser Gln Tyr Glu Cys Asp Glu | |
| 130 135 140 | |
| atc agg ttg ccg atc ttc aca ccg tcc cag agg gca aga agg ctg ctt | 480 |
| Ile Arg Leu Pro Ile Phe Thr Pro Ser Gln Arg Ala Arg Arg Leu Leu | |
| 145 150 155 160 | |
| gat ctt gcc acg gtg aaa gcg aat gga ttg gct gcc ttc ctt cta caa | 528 |
| Asp Leu Ala Thr Val Lys Ala Asn Gly Leu Ala Ala Phe Leu Leu Gln | |
| 165 170 175 | |
| cat gtt cag gaa tta cca gtc cca ttg gcc ctg cct ttg gaa gct gcc | 576 |
| His Val Gln Glu Leu Pro Val Pro Leu Ala Leu Pro Leu Glu Ala Ala | |
| 180 185 190 | |
| aca tgc aag aag tat atg gcc aag ctg agg acc acg gtg tct gct cag | 624 |
| Thr Cys Lys Lys Tyr Met Ala Lys Leu Arg Thr Thr Val Ser Ala Gln | |
| 195 200 205 | |
| tct cgc ttc ctc agt acc tat gat gga gca gag acg ctc tgc ctg gag | 672 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--|
| Ser | Arg | Phe | Leu | Ser | Thr | Tyr | Asp | Gly | Ala | Glu | Thr | Leu | Cys | Leu | Glu | | |
| 210 | | | | | | 215 | | | | | 220 | | | | | | |
| gac | ata | tac | aca | gag | aat | gtc | ctg | gag | gtc | tgg | gca | gat | gtg | ggc | atg | 720 | |
| Asp | Ile | Tyr | Thr | Glu | Asn | Val | Leu | Glu | Val | Trp | Ala | Asp | Val | Gly | Met | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| gct | gga | ccc | ccg | cag | aag | agc | cca | gcc | acc | ctg | ggc | ctg | gag | gag | ctc | 768 | |
| Ala | Gly | Pro | Pro | Gln | Lys | Ser | Pro | Ala | Thr | Leu | Gly | Leu | Glu | Glu | Leu | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| ttc | agc | acc | cct | ggc | cac | ctc | aat | gac | gat | gcg | gac | act | gtg | ctg | gtg | 816 | |
| Phe | Ser | Thr | Pro | Gly | His | Leu | Asn | Asp | Asp | Ala | Asp | Thr | Val | Leu | Val | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| gtg | ggt | gag | gcg | ggc | agt | ggc | aag | agc | acg | ctc | ctg | cag | cgg | ctg | cac | 864 | |
| Val | Gly | Glu | Ala | Gly | Ser | Gly | Lys | Ser | Thr | Leu | Leu | Gln | Arg | Leu | His | | |
| | | 275 | | | | | 280 | | | | | 285 | | | | | |
| ttg | ctg | tgg | gct | gca | ggg | caa | gac | ttc | cag | gaa | ttt | ctc | ttt | gtc | ttc | 912 | |
| Leu | Leu | Trp | Ala | Ala | Gly | Gln | Asp | Phe | Gln | Glu | Phe | Leu | Phe | Val | Phe | | |
| | | 290 | | | | 295 | | | | | 300 | | | | | | |
| cca | ttc | agc | tgc | cgg | cag | ctg | cag | tgc | atg | gcc | aaa | cca | ctc | tct | gtg | 960 | |
| Pro | Phe | Ser | Cys | Arg | Gln | Leu | Gln | Cys | Met | Ala | Lys | Pro | Leu | Ser | Val | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |
| cgg | act | cta | ctc | ttt | gag | cac | tgc | tgt | tgg | cct | gat | gtt | ggt | caa | gaa | 1008 | |
| Arg | Thr | Leu | Leu | Phe | Glu | His | Cys | Cys | Trp | Pro | Asp | Val | Gly | Gln | Glu | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | |
| gac | atc | ttc | cag | tta | ctc | ctt | gac | cac | cct | gac | cgt | gtc | ctg | tta | acc | 1056 | |
| Asp | Ile | Phe | Gln | Leu | Leu | Leu | Asp | His | Pro | Asp | Arg | Val | Leu | Leu | Thr | | |
| | | | 340 | | | | | 345 | | | | | 350 | | | | |
| ttt | gat | ggc | ttt | gac | gag | ttc | aag | ttc | agg | ttc | acg | gat | cgt | gaa | cgc | 1104 | |
| Phe | Asp | Gly | Phe | Asp | Glu | Phe | Lys | Phe | Arg | Phe | Thr | Asp | Arg | Glu | Arg | | |
| | | 355 | | | | | 360 | | | | | 365 | | | | | |
| cac | tgc | tcc | ccg | acc | gac | ccc | acc | tct | gtc | cag | acc | ctg | ctc | ttc | aac | 1152 | |
| His | Cys | Ser | Pro | Thr | Asp | Pro | Thr | Ser | Val | Gln | Thr | Leu | Leu | Phe | Asn | | |
| | | 370 | | | | 375 | | | | | 380 | | | | | | |
| ctt | ctg | cag | ggc | aac | ctg | ctg | aag | aat | gcc | cgc | aag | gtg | gtg | acc | agc | 1200 | |
| Leu | Leu | Gln | Gly | Asn | Leu | Leu | Lys | Asn | Ala | Arg | Lys | Val | Val | Thr | Ser | | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | | |
| cgt | ccg | gcc | gct | gtg | tcg | gcg | ttc | ctc | agg | aag | tac | atc | cgc | acc | gag | 1248 | |
| Arg | Pro | Ala | Ala | Val | Ser | Ala | Phe | Leu | Arg | Lys | Tyr | Ile | Arg | Thr | Glu | | |
| | | | 405 | | | | | 410 | | | | | 415 | | | | |
| ttc | aac | ctc | aag | ggc | ttc | tct | gaa | cag | ggc | atc | gag | ctg | tac | ctg | agg | 1296 | |
| Phe | Asn | Leu | Lys | Gly | Phe | Ser | Glu | Gln | Gly | Ile | Glu | Leu | Tyr | Leu | Arg | | |

| 420 | 425 | 430 | |
|---|-----|-----|------|
| aag cgc cat cat gag ccc ggg gtg gcg gac cgc ctc atc cgc ctg ctc | | | 1344 |
| Lys Arg His His Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu | | | |
| 435 | 440 | 445 | |
| caa gag acc tca gcc ctg cac ggt ttg tgc cac ctg cct gtc ttc tca | | | 1392 |
| Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser | | | |
| 450 | 455 | 460 | |
| tgg atg gtg tcc aaa tgc cac cag gaa ctg ttg ctg cag gag ggg ggg | | | 1440 |
| Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly | | | |
| 465 | 470 | 475 | 480 |
| tcc cca aag acc act aca gat atg tac ctg ctg att ctg cag cat ttt | | | 1488 |
| Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe | | | |
| 485 | 490 | 495 | |
| ctg ctg cat gcc acc ccc cca gac tca gct tcc caa ggt ctg gga ccc | | | 1536 |
| Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro | | | |
| 500 | 505 | 510 | |
| agt ctt ctt cgg ggc cgc ctc ccc acc ctc ctg cac ctg ggc aga ctg | | | 1584 |
| Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu | | | |
| 515 | 520 | 525 | |
| gct ctg tgg ggc ctg ggc atg tgc tgc tac gtg ttc tca gcc cag cag | | | 1632 |
| Ala Leu Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln | | | |
| 530 | 535 | 540 | |
| ctc cag gca gca cag gtc agc cct gat gac att tct ctt ggc ttc ctg | | | 1680 |
| Leu Gln Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu | | | |
| 545 | 550 | 555 | 560 |
| gtg cgt gcc aaa ggt gtc gtg cca ggg agt acg gcg ccc ctg gaa ttc | | | 1728 |
| Val Arg Ala Lys Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe | | | |
| 565 | 570 | 575 | |
| ctt cac atc act ttc cag tgc ttc ttt gcc gcg ttc tac ctg gca ctc | | | 1776 |
| Leu His Ile Thr Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu | | | |
| 580 | 585 | 590 | |
| agt gct gat gtg cca cca gct ttg ctc aga cac ctc ttc aat tgt ggc | | | 1824 |
| Ser Ala Asp Val Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly | | | |
| 595 | 600 | 605 | |
| agg cca ggc aac tca cca atg gcc agg ctc ctg ccc acg atg tgc atc | | | 1872 |
| Arg Pro Gly Asn Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile | | | |
| 610 | 615 | 620 | |
| cag gcc tcg gag gga aag gac agc agc gtg gca gct ttg ctg cag aag | | | 1920 |
| Gln Ala Ser Glu Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys | | | |
| 625 | 630 | 635 | 640 |

| | |
|---|------|
| gcc gag ccg cac aac ctt cag atc aca gca gcc ttc ctg gca ggg ctg | 1968 |
| Ala Glu Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu | |
| 645 650 655 | |
| ttg tcc cgg gag cac tgg ggc ctg ctg gct gag tgc cag aca tct gag | 2016 |
| Leu Ser Arg Glu His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu | |
| 660 665 670 | |
| aag gcc ctg ctc cgg cgc cag gcc tgt gcc cgc tgg tgt ctg gcc cgc | 2064 |
| Lys Ala Leu Leu Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg | |
| 675 680 685 | |
| agc ctc cgc aag cac ttc cac tcc atc ccg cca gct gca ccg ggt gag | 2112 |
| Ser Leu Arg Lys His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu | |
| 690 695 700 | |
| gcc aag agc gtg cat gcc atg ccc ggg ttc atc tgg ctc atc cgg agc | 2160 |
| Ala Lys Ser Val His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser | |
| 705 710 715 720 | |
| ctg tac gag atg cag gag gag cgg ctg gct cgg aag gct gca cgt ggc | 2208 |
| Leu Tyr Glu Met Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly | |
| 725 730 735 | |
| ctg aat gtt ggg cac ctc aag ttg aca ttt tgc agt gtg ggc ccc act | 2256 |
| Leu Asn Val Gly His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr | |
| 740 745 750 | |
| gag tgt gct gcc ctg gcc ttt gtg ctg cag cac ctc cgg cgg ccc gtg | 2304 |
| Glu Cys Ala Ala Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val | |
| 755 760 765 | |
| gcc ctg cag ctg gac tac aac tct gtg ggt gac att ggc gtg gag cag | 2352 |
| Ala Leu Gln Leu Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln | |
| 770 775 780 | |
| ctg ctg cct tgc ctt ggt gtc tgc aag gct ctg taa ttc tgg ggc aac | 2400 |
| Leu Leu Pro Cys Leu Gly Val Cys Lys Ala Leu Phe Trp Gly Asn | |
| 785 790 795 | |
| aga gtg ggt gac gag ggg gcc cag gcc ctg gct gaa gcc ttg ggt gat | 2448 |
| Arg Val Gly Asp Glu Gly Ala Gln Ala Leu Ala Glu Ala Leu Gly Asp | |
| 800 805 810 815 | |
| cac cag agc ttg agg tgg ctc agc ctg gtg ggg aac aac att ggc agt | 2496 |
| His Gln Ser Leu Arg Trp Leu Ser Leu Val Gly Asn Asn Ile Gly Ser | |
| 820 825 830 | |
| gtg ggt gcc caa gcc ttg gca ctg atg ctg gca aag aac gtc atg cta | 2544 |
| Val Gly Ala Gln Ala Leu Ala Leu Met Leu Ala Lys Asn Val Met Leu | |
| 835 840 845 | |

gaa gaa ctc tgc ctg gag gag aac cat ctc cag gat gaa ggt gta tgt 2592
 Glu Glu Leu Cys Leu Glu Glu Asn His Leu Gln Asp Glu Gly Val Cys
 850 855 860

tct ctc gca gaa gga ctg aag aaa aat tca agt ttg aaa atc ctg aac 2640
 Ser Leu Ala Glu Gly Leu Lys Lys Asn Ser Ser Leu Lys Ile Leu Asn
 865 870 875

ata aaa att cat gct tcg gga ttc aac aaa ctc ttg gaa agc att ttc 2688
 Ile Lys Ile His Ala Ser Gly Phe Asn Lys Leu Leu Glu Ser Ile Phe
 880 885 890 895

tgc atc ctc ctg gtt gtg gaa gca ttt ttc ctg cag aaa gtt gtc aag 2736
 Cys Ile Leu Leu Val Val Glu Ala Phe Phe Leu Gln Lys Val Val Lys
 900 905 910

att ctt gaa gaa atg gta gtc agt tgg cta gag gtc agg ttg tcc aat 2784
 Ile Leu Glu Glu Met Val Val Ser Trp Leu Glu Val Arg Leu Ser Asn
 915 920 925

aac tgc atc acc tac cta ggg gca gaa gcc ctc ctg cag gcc ctt gaa 2832
 Asn Cys Ile Thr Tyr Leu Gly Ala Glu Ala Leu Leu Gln Ala Leu Glu
 930 935 940

agg aat gac acc atc ctg gaa gtc tgg ctc cga ggg aac act ttc tct 2880
 Arg Asn Asp Thr Ile Leu Glu Val Trp Leu Arg Gly Asn Thr Phe Ser
 945 950 955

cta gag gag gtt gac aag ctc ggc tgc agg gac acc aga ctc ttg ctt 2928
 Leu Glu Glu Val Asp Lys Leu Gly Cys Arg Asp Thr Arg Leu Leu Leu
 960 965 970 975

tgaagtctcc gggaggatgt tcgtctcagt ttgtttgtga gcaggctgtg agtttgggcc 2988
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 ctgaacttgt tttct 3063

<210> 188
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 <212> PRT
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<400> 188
 Cys Glu Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu
 1 5 10 15
 Val Glu Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu
 20 25 30
 Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly
 35 40 45
 Phe His Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu
 50 55 60
 Asp Thr Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala
 65 70 75 80
 Ala Ala Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|-----|
| | | | | | | | | | | | | | | | | 85 | | | | | | | | | | | | | | | | | 90 | | | | | | | | | | | | | | | | | 95 | |
| Cys | Trp | Asp | Pro | His | Ser | Leu | His | Pro | Ala | Arg | Asp | Leu | Gln | Ser | His | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 100 | | | | | | | | | | | | | | | | | 105 | | | | | | | | | | | | | | | | | 110 | |
| Arg | Pro | Ala | Ile | Val | Arg | Arg | Leu | His | Ser | His | Val | Glu | Asn | Met | Leu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 115 | | | | | | | | | | | | | | | | | 120 | | | | | | | | | | | | | | | | | 125 | |
| Asp | Leu | Ala | Trp | Glu | Arg | Gly | Phe | Val | Ser | Gln | Tyr | Glu | Cys | Asp | Glu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 130 | | | | | | | | | | | | | | | | | 135 | | | | | | | | | | | | | | | | | 140 | |
| Ile | Arg | Leu | Pro | Ile | Phe | Thr | Pro | Ser | Gln | Arg | Ala | Arg | Arg | Leu | Leu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 145 | | | | | | | | | | | | | | | | | 150 | | | | | | | | | | | | | | | | | 155 | | | | | | | | | | | | | | | | | 160 |
| Asp | Leu | Ala | Thr | Val | Lys | Ala | Asn | Gly | Leu | Ala | Ala | Phe | Leu | Leu | Gln | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 165 | | | | | | | | | | | | | | | | | 170 | | | | | | | | | | | | | | | | | 175 | |
| His | Val | Gln | Glu | Leu | Pro | Val | Pro | Leu | Ala | Leu | Pro | Leu | Glu | Ala | Ala | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 180 | | | | | | | | | | | | | | | | | 185 | | | | | | | | | | | | | | | | | 190 | |
| Thr | Cys | Lys | Lys | Tyr | Met | Ala | Lys | Leu | Arg | Thr | Thr | Val | Ser | Ala | Gln | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 195 | | | | | | | | | | | | | | | | | 200 | | | | | | | | | | | | | | | | | 205 | |
| Ser | Arg | Phe | Leu | Ser | Thr | Tyr | Asp | Gly | Ala | Glu | Thr | Leu | Cys | Leu | Glu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 210 | | | | | | | | | | | | | | | | | 215 | | | | | | | | | | | | | | | | | 220 | |
| Asp | Ile | Tyr | Thr | Glu | Asn | Val | Leu | Glu | Val | Trp | Ala | Asp | Val | Gly | Met | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 225 | | | | | | | | | | | | | | | | | 230 | | | | | | | | | | | | | | | | | 235 | | | | | | | | | | | | | | | | | 240 |
| Ala | Gly | Pro | Pro | Gln | Lys | Ser | Pro | Ala | Thr | Leu | Gly | Leu | Glu | Glu | Leu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 245 | | | | | | | | | | | | | | | | | 250 | | | | | | | | | | | | | | | | | 255 | |
| Phe | Ser | Thr | Pro | Gly | His | Leu | Asn | Asp | Asp | Ala | Asp | Thr | Val | Leu | Val | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 260 | | | | | | | | | | | | | | | | | 265 | | | | | | | | | | | | | | | | | 270 | |
| Val | Gly | Glu | Ala | Gly | Ser | Gly | Lys | Ser | Thr | Leu | Leu | Gln | Arg | Leu | His | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 275 | | | | | | | | | | | | | | | | | 280 | | | | | | | | | | | | | | | | | 285 | |
| Leu | Leu | Trp | Ala | Ala | Gly | Gln | Asp | Phe | Gln | Glu | Phe | Leu | Phe | Val | Phe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 290 | | | | | | | | | | | | | | | | | 295 | | | | | | | | | | | | | | | | | 300 | |
| Pro | Phe | Ser | Cys | Arg | Gln | Leu | Gln | Cys | Met | Ala | Lys | Pro | Leu | Ser | Val | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Arg | Thr | Leu | Leu | Phe | Glu | His | Cys | Cys | Trp | Pro | Asp | Val | Gly | Gln | Glu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 325 | | | | | | | | | | | | | | | | | 330 | | | | | | | | | | | | | | | | | 335 | |
| Asp | Ile | Phe | Gln | Leu | Leu | Leu | Asp | His | Pro | Asp | Arg | Val | Leu | Leu | Thr | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 340 | | | | | | | | | | | | | | | | | 345 | | | | | | | | | | | | | | | | | 350 | |
| Phe | Asp | Gly | Phe | Asp | Glu | Phe | Lys | Phe | Arg | Phe | Thr | Asp | Arg | Glu | Arg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 355 | | | | | | | | | | | | | | | | | 360 | | | | | | | | | | | | | | | | | 365 | |
| His | Cys | Ser | Pro | Thr | Asp | Pro | Thr | Ser | Val | Gln | Thr | Leu | Leu | Phe | Asn | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 370 | | | | | | | | | | | | | | | | | 375 | | | | | | | | | | | | | | | | | 380 | |
| Leu | Leu | Gln | Gly | Asn | Leu | Leu | Lys | Asn | Ala | Arg | Lys | Val | Val | Thr | Ser | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 385 | | | | | | | | | | | | | | | | | 390 | | | | | | | | | | | | | | | | | 395 | | | | | | | | | | | | | | | | | 400 |
| Arg | Pro | Ala | Ala | Val | Ser | Ala | Phe | Leu | Arg | Lys | Tyr | Ile | Arg | Thr | Glu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 405 | | | | | | | | | | | | | | | | | 410 | | | | | | | | | | | | | | | | | 415 | |
| Phe | Asn | Leu | Lys | Gly | Phe | Ser | Glu | Gln | Gly | Ile | Glu | Leu | Tyr | Leu | Arg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 420 | | | | | | | | | | | | | | | | | 425 | | | | | | | | | | | | | | | | | 430 | |
| Lys | Arg | His | His | Glu | Pro | Gly | Val | Ala | Asp | Arg | Leu | Ile | Arg | Leu | Leu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 435 | | | | | | | | | | | | | | | | | 440 | | | | | | | | | | | | | | | | | 445 | |
| Gln | Glu | Thr | Ser | Ala | Leu | His | Gly | Leu | Cys | His | Leu | Pro | Val | Phe | Ser | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 450 | | | | | | | | | | | | | | | | | 455 | | | | | | | | | | | | | | | | | 460 | |
| Trp | Met | Val | Ser | Lys | Cys | His | Gln | Glu | Leu | Leu | Leu | Gln | Glu | Gly | Gly | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 465 | | | | | | | | | | | | | | | | | 470 | | | | | | | | | | | | | | | | | 475 | | | | | | | | | | | | | | | | | 480 |
| Ser | Pro | Lys | Thr | Thr | Thr | Asp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Leu | Arg | Gly | Arg | Leu | Pro | Thr | Leu | Leu | His | Leu | Gly | Arg | Leu |
| | | 515 | | | | | 520 | | | | | 525 | | | |
| Ala | Leu | Trp | Gly | Leu | Gly | Met | Cys | Cys | Tyr | Val | Phe | Ser | Ala | Gln | Gln |
| | | 530 | | | | 535 | | | | | 540 | | | | |
| Leu | Gln | Ala | Ala | Gln | Val | Ser | Pro | Asp | Asp | Ile | Ser | Leu | Gly | Phe | Leu |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Val | Arg | Ala | Lys | Gly | Val | Val | Pro | Gly | Ser | Thr | Ala | Pro | Leu | Glu | Phe |
| | | | | 565 | | | | | 570 | | | | | 575 | |
| Leu | His | Ile | Thr | Phe | Gln | Cys | Phe | Phe | Ala | Ala | Phe | Tyr | Leu | Ala | Leu |
| | | | 580 | | | | | 585 | | | | | 590 | | |
| Ser | Ala | Asp | Val | Pro | Pro | Ala | Leu | Leu | Arg | His | Leu | Phe | Asn | Cys | Gly |
| | | 595 | | | | | 600 | | | | | 605 | | | |
| Arg | Pro | Gly | Asn | Ser | Pro | Met | Ala | Arg | Leu | Leu | Pro | Thr | Met | Cys | Ile |
| | | 610 | | | | 615 | | | | | 620 | | | | |
| Gln | Ala | Ser | Glu | Gly | Lys | Asp | Ser | Ser | Val | Ala | Ala | Leu | Leu | Gln | Lys |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Ala | Glu | Pro | His | Asn | Leu | Gln | Ile | Thr | Ala | Ala | Phe | Leu | Ala | Gly | Leu |
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| Leu | Ser | Arg | Glu | His | Trp | Gly | Leu | Leu | Ala | Glu | Cys | Gln | Thr | Ser | Glu |
| | | | 660 | | | | | 665 | | | | | 670 | | |
| Lys | Ala | Leu | Leu | Arg | Arg | Gln | Ala | Cys | Ala | Arg | Trp | Cys | Leu | Ala | Arg |
| | | 675 | | | | | 680 | | | | | 685 | | | |
| Ser | Leu | Arg | Lys | His | Phe | His | Ser | Ile | Pro | Pro | Ala | Ala | Pro | Gly | Glu |
| | | 690 | | | | 695 | | | | | 700 | | | | |
| Ala | Lys | Ser | Val | His | Ala | Met | Pro | Gly | Phe | Ile | Trp | Leu | Ile | Arg | Ser |
| 705 | | | | | 710 | | | | | 715 | | | | | 720 |
| Leu | Tyr | Glu | Met | Gln | Glu | Glu | Arg | Leu | Ala | Arg | Lys | Ala | Ala | Arg | Gly |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Asn | Val | Gly | His | Leu | Lys | Leu | Thr | Phe | Cys | Ser | Val | Gly | Pro | Thr |
| | | | 740 | | | | | 745 | | | | | 750 | | |
| Glu | Cys | Ala | Ala | Leu | Ala | Phe | Val | Leu | Gln | His | Leu | Arg | Arg | Pro | Val |
| | | 755 | | | | | 760 | | | | | 765 | | | |
| Ala | Leu | Gln | Leu | Asp | Tyr | Asn | Ser | Val | Gly | Asp | Ile | Gly | Val | Glu | Gln |
| | | 770 | | | | 775 | | | | | 780 | | | | |
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<400> 189

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| Phe | Trp | Gly | Asn | Arg | Val | Gly | Asp | Glu | Gly | Ala | Gln | Ala | Leu | Ala | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Leu | Gly | Asp | His | Gln | Ser | Leu | Arg | Trp | Leu | Ser | Leu | Val | Gly | Asn |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asn | Ile | Gly | Ser | Val | Gly | Ala | Gln | Ala | Leu | Ala | Leu | Met | Leu | Ala | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asn | Val | Met | Leu | Glu | Glu | Leu | Cys | Leu | Glu | Glu | Asn | His | Leu | Gln | Asp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Glu | Gly | Val | Cys | Ser | Leu | Ala | Glu | Gly | Leu | Lys | Lys | Asn | Ser | Ser | Leu |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | 70 | | 75 | | 80 | | | | | | | | | |
| Lys | Ile | Leu | Asn | Ile | Lys | Ile | His | Ala | Ser | Gly | Phe | Asn | Lys | Leu | Leu |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Glu | Ser | Ile | Phe | Cys | Ile | Leu | Leu | Val | Val | Glu | Ala | Phe | Phe | Leu | Gln |
| | | | 100 | | | | | 105 | | | | | | 110 | |
| Lys | Val | Val | Lys | Ile | Leu | Glu | Glu | Met | Val | Val | Ser | Trp | Leu | Glu | Val |
| | | | 115 | | | | | 120 | | | | | | 125 | |
| Arg | Leu | Ser | Asn | Asn | Cys | Ile | Thr | Tyr | Leu | Gly | Ala | Glu | Ala | Leu | Leu |
| | | | 130 | | | | | 135 | | | | | | 140 | |
| Gln | Ala | Leu | Glu | Arg | Asn | Asp | Thr | Ile | Leu | Glu | Val | Trp | Leu | Arg | Gly |
| | | | 145 | | | | | 150 | | | | | | 155 | |
| Asn | Thr | Phe | Ser | Leu | Glu | Glu | Val | Asp | Lys | Leu | Gly | Cys | Arg | Asp | Thr |
| | | | | 165 | | | | | | 170 | | | | 175 | |
| Arg | Leu | Leu | Leu | | | | | | | | | | | | |
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 ctgctgggaa ggctgctgcc caacctgtgt atccagggtc ccagagtcaa gaagggcagc 180
 gaagcagccc tg ctg cag aag gct gag cca cac aac ctg caa atc aca gca 231
 Leu Gln Lys Ala Glu Pro His Asn Leu Gln Ile Thr Ala
 1 5 10

gcc ttc cta gca ggt ctg ttg tcc cag cag cat cgg gac ctg ttg gct 279
 Ala Phe Leu Ala Gly Leu Leu Ser Gln Gln His Arg Asp Leu Leu Ala
 15 20 25

gca tgc cag gtc tcc gag agg gta ctg ctc cag cgt cag gca cgt gcc 327
 Ala Cys Gln Val Ser Glu Arg Val Leu Leu Gln Arg Gln Ala Arg Ala
 30 35 40 45

cgc tcg tgt ctg gcc cac agc ctc cgc gag cac ttc cat tcc atc ccg 375
 Arg Ser Cys Leu Ala His Ser Leu Arg Glu His Phe His Ser Ile Pro
 50 55 60

cct gcc gtg ccc ggt gag acc aag agc atg cat gct atg ccg ggc ttc 423
 Pro Ala Val Pro Gly Glu Thr Lys Ser Met His Ala Met Pro Gly Phe
 65 70 75

att tgg ctc atc cgt agc ctg tac gag atg cag gag gag cag ttg gcc 471
 Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu Gln Leu Ala
 80 85 90

cag gag gct gtc cgt cgc ttg gac atc ggg cac ctg aag ttg aca ttt 519
Gln Glu Ala Val Arg Arg Leu Asp Ile Gly His Leu Lys Leu Thr Phe
95 100 105

tgc aga gtg ggc cct gca gag tgt gct gca ctg gcc ttt gta ctg caa 567
Cys Arg Val Gly Pro Ala Glu Cys Ala Ala Leu Ala Phe Val Leu Gln
110 115 120 125

cat ctc cag cgg cct gtg gcc cta cag ctg gat tac aac tct gtg 612
His Leu Gln Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn Ser Val
130 135 140

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Val Ser Glu Arg Val Leu Leu Gln Arg Gln Ala Arg Ala Arg Ser Cys
35 40 45
Leu Ala His Ser Leu Arg Glu His Phe His Ser Ile Pro Pro Ala Val
50 55 60
Pro Gly Glu Thr Lys Ser Met His Ala Met Pro Gly Phe Ile Trp Leu
65 70 75 80
Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu Gln Leu Ala Gln Glu Ala
85 90 95
Val Arg Arg Leu Asp Ile Gly His Leu Lys Leu Thr Phe Cys Arg Val
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| Leu | Gln | Lys | Ala | Glu | Pro | His | Asn | Leu | Gln | Ile | Thr | Ala | Ala | Phe | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| gca | ggt | ctg | ttg | tcc | cag | cag | cat | cgg | gac | ctg | ttg | gct | gca | tgc | cag | 96 |
| Ala | Gly | Leu | Leu | Ser | Gln | Gln | His | Arg | Asp | Leu | Leu | Ala | Ala | Cys | Gln | |
| | | 20 | | | | | | 25 | | | | | 30 | | | |
| atc | tcc | gag | agg | gtg | ctg | ctc | cag | cgt | cag | gca | cgt | gcc | cgc | tcg | tgt | 144 |
| Ile | Ser | Glu | Arg | Val | Leu | Leu | Gln | Arg | Gln | Ala | Arg | Ala | Arg | Ser | Cys | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| ctg | gcc | cac | agc | ctc | cgc | gag | cac | ttc | cat | tcc | atc | ccg | cct | gcc | gtg | 192 |
| Leu | Ala | His | Ser | Leu | Arg | Glu | His | Phe | His | Ser | Ile | Pro | Pro | Ala | Val | |
| | 50 | | | | | 55 | | | | 60 | | | | | | |
| ccc | ggt | gag | acc | aag | agc | atg | cat | gct | atg | ccg | ggc | ttt | att | tgg | ctc | 240 |
| Pro | Gly | Glu | Thr | Lys | Ser | Met | His | Ala | Met | Pro | Gly | Phe | Ile | Trp | Leu | |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | | |
| atc | cgg | agc | ctg | tac | gag | atg | cag | gag | gag | cag | ttg | gcc | cag | gag | gct | 288 |
| Ile | Arg | Ser | Leu | Tyr | Glu | Met | Gln | Glu | Glu | Gln | Leu | Ala | Gln | Glu | Ala | |
| | | | 85 | | | | | 90 | | | | | 95 | | | |
| gtc | cgt | cgc | ttg | gac | atc | ggg | cac | ctg | aag | ttg | aca | ttt | tgc | aga | gtg | 336 |
| Val | Arg | Arg | Leu | Asp | Ile | Gly | His | Leu | Lys | Leu | Thr | Phe | Cys | Arg | Val | |
| | | 100 | | | | | | 105 | | | | | 110 | | | |
| ggc | cct | gca | gag | tgt | gct | gcg | ctg | gcc | ttt | gta | ctg | caa | cat | ctc | cag | 384 |
| Gly | Pro | Ala | Glu | Cys | Ala | Ala | Leu | Ala | Phe | Val | Leu | Gln | His | Leu | Gln | |
| | | 115 | | | | | 120 | | | | | 125 | | | | |
| cgg | cct | gtg | gcc | cta | cag | ctg | gat | tac | aac | tct | gt | | | | | 419 |
| Arg | Pro | Val | Ala | Leu | Gln | Leu | Asp | Tyr | Asn | Ser | | | | | | |
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| Leu | Gln | Lys | Ala | Glu | Pro | His | Asn | Leu | Gln | Ile | Thr | Ala | Ala | Phe | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| Ala | Gly | Leu | Leu | Ser | Gln | Gln | His | Arg | Asp | Leu | Leu | Ala | Ala | Cys | Gln | |
| | | 20 | | | | | | 25 | | | | | 30 | | | |
| Ile | Ser | Glu | Arg | Val | Leu | Leu | Gln | Arg | Gln | Ala | Arg | Ala | Arg | Ser | Cys | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| Leu | Ala | His | Ser | Leu | Arg | Glu | His | Phe | His | Ser | Ile | Pro | Pro | Ala | Val | |
| | 50 | | | | | 55 | | | | 60 | | | | | | |
| Pro | Gly | Glu | Thr | Lys | Ser | Met | His | Ala | Met | Pro | Gly | Phe | Ile | Trp | Leu | |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | | |
| Ile | Arg | Ser | Leu | Tyr | Glu | Met | Gln | Glu | Glu | Gln | Leu | Ala | Gln | Glu | Ala | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| | | | | 85 | | | | | 90 | | | | | 95 | | | | |
| Val | Arg | Arg | Leu | Asp | Ile | Gly | His | Leu | Lys | Leu | Thr | Phe | Cys | Arg | Val | | | |
| | | | 100 | | | | | | 105 | | | | 110 | | | | | |
| Gly | Pro | Ala | Glu | Cys | Ala | Ala | Leu | Ala | Phe | Val | Leu | Gln | His | Leu | Gln | | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | | |
| Arg | Pro | Val | Ala | Leu | Gln | Leu | Asp | Tyr | Asn | Ser | | | | | | | | |
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| <400> 196 | | | | | | | | | | | | | | | | | | |
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| Met | Cys | Ser | Gln | Glu | Ala | Phe | Gln | Ala | Gln | Arg | Ser | Gln | Leu | Val | Glu | | | 48 |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|----|
| ctg | ctg | gtc | tca | ggg | tcc | ctg | gaa | ggc | ttc | gag | agt | gtc | ctg | gac | tgg | | | |
| Leu | Leu | Val | Ser | Gly | Ser | Leu | Glu | Gly | Phe | Glu | Ser | Val | Leu | Asp | Trp | | | 96 |
| | | | 20 | | | | | 25 | | | | | 30 | | | | | |

| | | | | | | | | | | | | | | | | | | |
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| ctg | ctg | tcc | tgg | gag | gtc | ctc | tcc | tgg | gag | gac | tac | gag | ggc | ttc | cac | | | |
| Leu | Leu | Ser | Trp | Glu | Val | Leu | Ser | Trp | Glu | Asp | Tyr | Glu | Gly | Phe | His | | | 144 |
| | | 35 | | | | | 40 | | | | | | 45 | | | | | |

| | |
|---|-----|
| ctc ctg ggc cag cct ctc tcc cac ttg gcc agg cgc ctt ctg gac acc | 192 |
| Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu Asp Thr | |
| 50 55 60 | |
| gtc tgg aat aag ggt act tgg gcc tgt cag aag ctc atc gcg gct gcc | 240 |
| Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala Ala Ala | |
| 65 70 75 80 | |
| caa gaa gcc cag gcc gac agc cag tcc ccc aag ctg cat ggc tgc tgg | 288 |
| Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly Cys Trp | |
| 85 90 95 | |
| gac ccc cac tcg ctc cac cca gcc cga gac ctg cag agt cac cgg cca | 336 |
| Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His Arg Pro | |
| 100 105 110 | |
| gcc att gtc agg agg ctc cac agc cat gtg gag aac atg ctg gac ctg | 384 |
| Ala Ile Val Arg Arg Leu His Ser His Val Glu Asn Met Leu Asp Leu | |
| 115 120 125 | |
| gca tgg gag cgg ggt ttc gtc agc cag tat gaa tgt gat gaa atc agg | 432 |
| Ala Trp Glu Arg Gly Phe Val Ser Gln Tyr Glu Cys Asp Glu Ile Arg | |
| 130 135 140 | |
| ttg ccg atc ttc aca ccg tcc cag agg gca aga agg ctg ctt gat ctt | 480 |
| Leu Pro Ile Phe Thr Pro Ser Gln Arg Ala Arg Arg Leu Leu Asp Leu | |
| 145 150 155 160 | |
| gcc acg gtg aaa gcg aat gga ttg gct gcc ttc ctt cta caa cat gtt | 528 |
| Ala Thr Val Lys Ala Asn Gly Leu Ala Ala Phe Leu Leu Gln His Val | |
| 165 170 175 | |
| cag gaa tta cca gtc cca ttg gcc ctg cct ttg gaa gct gcc aca tgc | 576 |
| Gln Glu Leu Pro Val Pro Leu Ala Leu Pro Leu Glu Ala Ala Thr Cys | |
| 180 185 190 | |
| aag aag tat atg gcc aag ctg agg acc acg gtg tct gct cag tct cgc | 624 |
| Lys Lys Tyr Met Ala Lys Leu Arg Thr Thr Val Ser Ala Gln Ser Arg | |
| 195 200 205 | |
| ttc ctc agt acc tat gat gga gca gag acg ctc tgc ctg gag gac ata | 672 |
| Phe Leu Ser Thr Tyr Asp Gly Ala Glu Thr Leu Cys Leu Glu Asp Ile | |
| 210 215 220 | |
| tac aca gag aat gtc ctg gag gtc tgg gca gat gtg ggc atg gct gga | 720 |
| Tyr Thr Glu Asn Val Leu Glu Val Trp Ala Asp Val Gly Met Ala Gly | |
| 225 230 235 240 | |
| ccc ccg cag aag agc cca gcc acc ctg ggc ctg gag gag ctc ttc agc | 768 |
| Pro Pro Gln Lys Ser Pro Ala Thr Leu Gly Leu Glu Glu Leu Phe Ser | |
| 245 250 255 | |
| acc cct ggc cac ctc aat gac gat gcg gac act gtg ctg gtg gtg ggt | 816 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------|
| Thr | Pro | Gly | His | Leu | Asn | Asp | Asp | Ala | Asp | Thr | Val | Leu | Val | Val | Gly | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| gag | gcg | ggc | agt | ggc | aag | agc | acg | ctc | ctg | cag | cgg | ctg | cac | ttg | ctg | | 864 |
| Glu | Ala | Gly | Ser | Gly | Lys | Ser | Thr | Leu | Leu | Gln | Arg | Leu | His | Leu | Leu | | |
| | | 275 | | | | | 280 | | | | 285 | | | | | | |
| tgg | gct | gca | ggg | caa | gac | ttc | cag | gaa | ttt | ctc | ttt | gtc | ttc | cca | ttc | | 912 |
| Trp | Ala | Ala | Gly | Gln | Asp | Phe | Gln | Glu | Phe | Leu | Phe | Val | Phe | Pro | Phe | | |
| | | 290 | | | | 295 | | | | | 300 | | | | | | |
| agc | tgc | cgg | cag | ctg | cag | tgc | atg | gcc | aaa | cca | ctc | tct | gtg | cgg | act | | 960 |
| Ser | Cys | Arg | Gln | Leu | Gln | Cys | Met | Ala | Lys | Pro | Leu | Ser | Val | Arg | Thr | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |
| cta | ctc | ttt | gag | cac | tgc | tgt | tgg | cct | gat | gtt | ggc | caa | gaa | gac | atc | | 1008 |
| Leu | Leu | Phe | Glu | His | Cys | Cys | Trp | Pro | Asp | Val | Gly | Gln | Glu | Asp | Ile | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | |
| ttc | cag | tta | ctc | ctt | gac | cac | cct | gac | cgt | gtc | ctg | tta | acc | ttt | gat | | 1056 |
| Phe | Gln | Leu | Leu | Leu | Asp | His | Pro | Asp | Arg | Val | Leu | Leu | Thr | Phe | Asp | | |
| | | | 340 | | | | | 345 | | | | | 350 | | | | |
| ggc | ttt | gac | gag | ttc | aag | ttc | agg | ttc | acg | gat | cgt | gaa | cgc | cac | tgc | | 1104 |
| Gly | Phe | Asp | Glu | Phe | Lys | Phe | Arg | Phe | Thr | Asp | Arg | Glu | Arg | His | Cys | | |
| | | 355 | | | | | 360 | | | | | 365 | | | | | |
| tcc | ccg | acc | gac | ccc | acc | tct | gtc | cag | acc | ctg | ctc | ttc | aac | ctt | ctg | | 1152 |
| Ser | Pro | Thr | Asp | Pro | Thr | Ser | Val | Gln | Thr | Leu | Leu | Phe | Asn | Leu | Leu | | |
| | | 370 | | | | 375 | | | | | 380 | | | | | | |
| cag | ggc | aac | ctg | ctg | aag | aat | gcc | cgc | aag | gtg | gtg | acc | agc | cgt | ccg | | 1200 |
| Gln | Gly | Asn | Leu | Leu | Lys | Asn | Ala | Arg | Lys | Val | Val | Thr | Ser | Arg | Pro | | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | | |
| gcc | gct | gtg | tcg | gcg | ttc | ctc | agg | aag | tac | atc | cgc | acc | gag | ttc | aac | | 1248 |
| Ala | Ala | Val | Ser | Ala | Phe | Leu | Arg | Lys | Tyr | Ile | Arg | Thr | Glu | Phe | Asn | | |
| | | | | 405 | | | | 410 | | | | | | 415 | | | |
| ctc | aag | ggc | ttc | tct | gaa | cag | ggc | atc | gag | ctg | tac | ctg | agg | aag | cgc | | 1296 |
| Leu | Lys | Gly | Phe | Ser | Glu | Gln | Gly | Ile | Glu | Leu | Tyr | Leu | Arg | Lys | Arg | | |
| | | | 420 | | | | 425 | | | | | | 430 | | | | |
| cat | cat | gag | ccc | ggg | gtg | gcg | gac | cgc | ctc | atc | cgc | ctg | ctc | caa | gag | | 1344 |
| His | His | Glu | Pro | Gly | Val | Ala | Asp | Arg | Leu | Ile | Arg | Leu | Leu | Gln | Glu | | |
| | | 435 | | | | | 440 | | | | | 445 | | | | | |
| acc | tca | gcc | ctg | cac | ggc | ttg | tgc | cac | ctg | cct | gtc | ttc | tca | tgg | atg | | 1392 |
| Thr | Ser | Ala | Leu | His | Gly | Leu | Cys | His | Leu | Pro | Val | Phe | Ser | Trp | Met | | |
| | | 450 | | | | 455 | | | | | 460 | | | | | | |
| gtg | tcc | aaa | tgc | cac | cag | gaa | ctg | ttg | ctg | cag | gag | ggg | ggg | tcc | cca | | 1440 |
| Val | Ser | Lys | Cys | His | Gln | Glu | Leu | Leu | Leu | Gln | Glu | Gly | Gly | Ser | Pro | | |

| 465 | 470 | 475 | 480 | |
|---|-----|-----|-----|------|
| aag acc act aca gat atg tac ctg ctg att ctg cag cat ttt ctg ctg | | | | 1488 |
| Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe Leu Leu | | | | |
| | 485 | 490 | 495 | |
| cat gcc acc ccc cca gac tca gct tcc caa ggt ctg gga ccc agt ctt | | | | 1536 |
| His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu | | | | |
| | 500 | 505 | 510 | |
| ctt cgg ggc cgc ctc ccc acc ctc ctg cac ctg ggc aga ctg gct ctg | | | | 1584 |
| Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu Ala Leu | | | | |
| | 515 | 520 | 525 | |
| tgg ggc ctg ggc atg tgc tgc tac gtg ttc tca gcc cag cag ctc cag | | | | 1632 |
| Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln | | | | |
| | 530 | 535 | 540 | |
| gca gca cag gtc agc cct gat gac att tct ctt ggc ttc ctg gtg cgt | | | | 1680 |
| Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu Val Arg | | | | |
| | 545 | 550 | 555 | 560 |
| gcc aaa ggt gtc gtg cca ggg agt acg gcg ccc ctg gaa ttc ctt cac | | | | 1728 |
| Ala Lys Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe Leu His | | | | |
| | 565 | 570 | 575 | |
| atc act ttc cag tgc ttc ttt gcc gcg ttc tac ctg gca ctc agt gct | | | | 1776 |
| Ile Thr Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu Ser Ala | | | | |
| | 580 | 585 | 590 | |
| gat gtg cca cca gct ttg ctc aga cac ctc ttc aat tgt ggc agg cca | | | | 1824 |
| Asp Val Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly Arg Pro | | | | |
| | 595 | 600 | 605 | |
| ggc aac tca cca atg gcc agg ctc ctg ccc acg atg tgc atc cag gcc | | | | 1872 |
| Gly Asn Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile Gln Ala | | | | |
| | 610 | 615 | 620 | |
| tcg gag gga aag gac agc agc gtg gca gct ttg ctg cag aag gcc gag | | | | 1920 |
| Ser Glu Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys Ala Glu | | | | |
| | 625 | 630 | 635 | 640 |
| ccg cac aac ctt cag atc aca gca gcc ttc ctg gca ggg ctg ttg tcc | | | | 1968 |
| Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu Leu Ser | | | | |
| | 645 | 650 | 655 | |
| cgg gag cac tgg ggc ctg ctg gct gag tgc cag aca tct gag aag gcc | | | | 2016 |
| Arg Glu His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu Lys Ala | | | | |
| | 660 | 665 | 670 | |
| ctg ctc cgg cgc cag gcc tgt gcc cgc tgg tgt ctg gcc cgc agc ctc | | | | 2064 |
| Leu Leu Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg Ser Leu | | | | |
| | 675 | 680 | 685 | |

| | |
|---|------|
| cgc aag cac ttc cac tcc atc ccg cca gct gca ccg ggt gag gcc aag | 2112 |
| Arg Lys His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu Ala Lys | |
| 690 695 700 | |
| agc gtg cat gcc atg ccc ggg ttc atc tgg ctc atc cgg agc ctg tac | 2160 |
| Ser Val His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser Leu Tyr | |
| 705 710 715 720 | |
| gag atg cag gag gag cgg ctg gct cgg aag gct gca cgt ggc ctg aat | 2208 |
| Glu Met Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly Leu Asn | |
| 725 730 735 | |
| gtt ggg cac ctc aag ttg aca ttt tgc agt gtg ggc ccc act gag tgt | 2256 |
| Val Gly His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr Glu Cys | |
| 740 745 750 | |
| gct gcc ctg gcc ttt gtg ctg cag cac ctc cgg cgg ccc gtg gcc ctg | 2304 |
| Ala Ala Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val Ala Leu | |
| 755 760 765 | |
| cag ctg gac tac aac tct gtg ggt gac att ggc gtg gag cag ctg ctg | 2352 |
| Gln Leu Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln Leu Leu | |
| 770 775 780 | |
| cct tgc ctt ggt gtc tgc aag gct ctg tat ttg cgc gat aac aat atc | 2400 |
| Pro Cys Leu Gly Val Cys Lys Ala Leu Tyr Leu Arg Asp Asn Asn Ile | |
| 785 790 795 800 | |
| tca gac cga ggc atc tgc aag ctc att gaa tgt gct ctt cac tgc gag | 2448 |
| Ser Asp Arg Gly Ile Cys Lys Leu Ile Glu Cys Ala Leu His Cys Glu | |
| 805 810 815 | |
| caa ttg cag aag tta gct cta ttc aac aac aaa ttg act gac ggc tgt | 2496 |
| Gln Leu Gln Lys Leu Ala Leu Phe Asn Asn Lys Leu Thr Asp Gly Cys | |
| 820 825 830 | |
| gca cac tcc atg gct aag ctc ctt gca tgc agg cag aac ttc ttg gca | 2544 |
| Ala His Ser Met Ala Lys Leu Leu Ala Cys Arg Gln Asn Phe Leu Ala | |
| 835 840 845 | |
| ttg agg ctg ggg aat aac tac atc act gcc gcg gga gcc caa gtg ctg | 2592 |
| Leu Arg Leu Gly Asn Asn Tyr Ile Thr Ala Ala Gly Ala Gln Val Leu | |
| 850 855 860 | |
| gcc gag ggg ctc cga ggc aac acc tcc ttg cag ttc ctg gga ttc tgg | 2640 |
| Ala Glu Gly Leu Arg Gly Asn Thr Ser Leu Gln Phe Leu Gly Phe Trp | |
| 865 870 875 880 | |
| ggc aac aga gtg ggt gac gag ggg gcc cag gcc ctg gct gaa gcc ttg | 2688 |
| Gly Asn Arg Val Gly Asp Glu Gly Ala Gln Ala Leu Ala Glu Ala Leu | |
| 885 890 895 | |

| | |
|---|------|
| ggt gat cac cag agc ttg agg tgg ctc agc ctg gtg ggg aac aac att | 2736 |
| Gly Asp His Gln Ser Leu Arg Trp Leu Ser Leu Val Gly Asn Asn Ile | |
| 900 905 910 | |
| ggc agt gtg ggt gcc caa gcc ttg gca ctg atg ctg gca aag aac gtc | 2784 |
| Gly Ser Val Gly Ala Gln Ala Leu Ala Leu Met Leu Ala Lys Asn Val | |
| 915 920 925 | |
| atg cta gaa gaa ctc tgc ctg gag gag aac cat ctc cag gat gaa ggt | 2832 |
| Met Leu Glu Glu Leu Cys Leu Glu Glu Asn His Leu Gln Asp Glu Gly | |
| 930 935 940 | |
| gta tgt tct ctc gca gaa gga ctg aag aaa aat tca agt ttg aaa atc | 2880 |
| Val Cys Ser Leu Ala Glu Gly Leu Lys Lys Asn Ser Ser Leu Lys Ile | |
| 945 950 955 960 | |
| ctg aag ttg tcc aat aac tgc atc acc tac cta ggg gca gaa gcc ctc | 2928 |
| Leu Lys Leu Ser Asn Asn Cys Ile Thr Tyr Leu Gly Ala Glu Ala Leu | |
| 965 970 975 | |
| ctg cag gcc ctt gaa agg aat gac acc atc ctg gaa gtc tgg ctc cga | 2976 |
| Leu Gln Ala Leu Glu Arg Asn Asp Thr Ile Leu Glu Val Trp Leu Arg | |
| 980 985 990 | |
| ggg aac act ttc tct cta gag gag gtt gac aag ctc ggc tgc agg gac | 3024 |
| Gly Asn Thr Phe Ser Leu Glu Glu Val Asp Lys Leu Gly Cys Arg Asp | |
| 995 1000 1005 | |
| acc aga ctc ttg ctt tga | 3042 |
| Thr Arg Leu Leu Leu * | |
| 1010 | |

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<400> 197

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|---|--|
| Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu Val Glu | |
| 1 5 10 15 | |
| Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu Asp Trp | |
| 20 25 30 | |
| Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly Phe His | |
| 35 40 45 | |
| Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu Asp Thr | |
| 50 55 60 | |
| Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala Ala Ala | |
| 65 70 75 80 | |
| Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly Cys Trp | |
| 85 90 95 | |
| Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His Arg Pro | |
| 100 105 110 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Val | Arg | Arg | Leu | His | Ser | His | Val | Glu | Asn | Met | Leu | Asp | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ala | Trp | Glu | Arg | Gly | Phe | Val | Ser | Gln | Tyr | Glu | Cys | Asp | Glu | Ile | Arg |
| | | 130 | | | | | 135 | | | | | 140 | | | |
| Leu | Pro | Ile | Phe | Thr | Pro | Ser | Gln | Arg | Ala | Arg | Arg | Leu | Leu | Asp | Leu |
| 145 | | | | | | | 150 | | | | 155 | | | | 160 |
| Ala | Thr | Val | Lys | Ala | Asn | Gly | Leu | Ala | Ala | Phe | Leu | Leu | Gln | His | Val |
| | | | | | | | | | | | | | | | |
| | | | | 165 | | | | | | 170 | | | | | 175 |
| Gln | Glu | Leu | Pro | Val | Pro | Leu | Ala | Leu | Pro | Leu | Glu | Ala | Ala | Thr | Cys |
| | | | | | | | | | | | | | | | |
| | | | | 180 | | | | | | 185 | | | | | 190 |
| Lys | Lys | Tyr | Met | Ala | Lys | Leu | Arg | Thr | Thr | Val | Ser | Ala | Gln | Ser | Arg |
| | | | | | | | | | | | | | | | |
| | | | | 195 | | | | | | | | 205 | | | |
| Phe | Leu | Ser | Thr | Tyr | Asp | Gly | Ala | Glu | Thr | Leu | Cys | Leu | Glu | Asp | Ile |
| | | | | | | | | | | | | | | | |
| | | | | 210 | | | | | | | | 220 | | | |
| Tyr | Thr | Glu | Asn | Val | Leu | Glu | Val | Trp | Ala | Asp | Val | Gly | Met | Ala | Gly |
| 225 | | | | | | | | | | | | | | | |
| | | | | 230 | | | | | | | 235 | | | | 240 |
| Pro | Pro | Gln | Lys | Ser | Pro | Ala | Thr | Leu | Gly | Leu | Glu | Glu | Leu | Phe | Ser |
| | | | | | | | | | | | | | | | |
| | | | | 245 | | | | | | | 250 | | | | 255 |
| Thr | Pro | Gly | His | Leu | Asn | Asp | Asp | Ala | Asp | Thr | Val | Leu | Val | Val | Gly |
| | | | | | | | | | | | | | | | |
| | | | | 260 | | | | | | | | | | | 270 |
| Glu | Ala | Gly | Ser | Gly | Lys | Ser | Thr | Leu | Leu | Gln | Arg | Leu | His | Leu | Leu |
| | | | | | | | | | | | | | | | |
| | | | | 275 | | | | | | | | | 285 | | |
| Trp | Ala | Ala | Gly | Gln | Asp | Phe | Gln | Glu | Phe | Leu | Phe | Val | Phe | Pro | Phe |
| | | | | | | | | | | | | | | | |
| | | | | 290 | | | | | | | | 300 | | | |
| Ser | Cys | Arg | Gln | Leu | Gln | Cys | Met | Ala | Lys | Pro | Leu | Ser | Val | Arg | Thr |
| 305 | | | | | | | | | | | | | | | |
| | | | | 310 | | | | | | | | 315 | | | 320 |
| Leu | Leu | Phe | Glu | His | Cys | Cys | Trp | Pro | Asp | Val | Gly | Gln | Glu | Asp | Ile |
| | | | | | | | | | | | | | | | |
| | | | | 325 | | | | | | | | | | | 335 |
| Phe | Gln | Leu | Leu | Leu | Asp | His | Pro | Asp | Arg | Val | Leu | Leu | Thr | Phe | Asp |
| | | | | | | | | | | | | | | | |
| | | | | 340 | | | | | | | | | | | 350 |
| Gly | Phe | Asp | Glu | Phe | Lys | Phe | Arg | Phe | Thr | Asp | Arg | Glu | Arg | His | Cys |
| | | | | | | | | | | | | | | | |
| | | | | 355 | | | | | | | | | 365 | | |
| Ser | Pro | Thr | Asp | Pro | Thr | Ser | Val | Gln | Thr | Leu | Leu | Phe | Asn | Leu | Leu |
| | | | | | | | | | | | | | | | |
| | | | | 370 | | | | | | | | | 380 | | |
| Gln | Gly | | | | | | | | | | | | | | |

| | | |
|---|-----|-----|
| 530 | 535 | 540 |
| Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu Val Arg | | |
| 545 | 550 | 555 |
| Ala Lys Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe Leu His | | 560 |
| | 565 | 570 |
| Ile Thr Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu Ser Ala | | 575 |
| | 580 | 585 |
| Asp Val Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly Arg Pro | | 590 |
| | 595 | 600 |
| Gly Asn Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile Gln Ala | | 605 |
| | 610 | 615 |
| Ser Glu Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys Ala Glu | | 620 |
| 625 | 630 | 635 |
| Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu Leu Ser | | 640 |
| | 645 | 650 |
| Arg Glu His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu Lys Ala | | 655 |
| | 660 | 665 |
| Leu Leu Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg Ser Leu | | 670 |
| | 675 | 680 |
| Arg Lys His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu Ala Lys | | 685 |
| | 690 | 695 |
| Ser Val His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser Leu Tyr | | 700 |
| 705 | 710 | 715 |
| Glu Met Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly Leu Asn | | 720 |
| | 725 | 730 |
| Val Gly His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr Glu Cys | | 735 |
| | 740 | 745 |
| Ala Ala Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val Ala Leu | | 750 |
| | 755 | 760 |
| Gln Leu Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln Leu Leu | | 765 |
| | 770 | 775 |
| Pro Cys Leu Gly Val Cys Lys Ala Leu Tyr Leu Arg Asp Asn Asn Ile | | 780 |
| 785 | 790 | 795 |
| Ser Asp Arg Gly Ile Cys Lys Leu Ile Glu Cys Ala Leu His Cys Glu | | 800 |
| | 805 | 810 |
| Gln Leu Gln Lys Leu Ala Leu Phe Asn Asn Lys Leu Thr Asp Gly Cys | | 815 |
| | 820 | 825 |
| Ala His Ser Met Ala Lys Leu Leu Ala Cys Arg Gln Asn Phe Leu Ala | | 830 |
| | 835 | 840 |
| Leu Arg Leu Gly Asn Asn Tyr Ile Thr Ala Ala Gly Ala Gln Val Leu | | 845 |
| | 850 | 855 |
| Ala Glu Gly Leu Arg Gly Asn Thr Ser Leu Gln Phe Leu Gly Phe Trp | | 860 |
| 865 | 870 | 875 |
| Gly Asn Arg Val Gly Asp Glu Gly Ala Gln Ala Leu Ala Glu Ala Leu | | 880 |
| | 885 | 890 |
| Gly Asp His Gln Ser Leu Arg Trp Leu Ser Leu Val Gly Asn Asn Ile | | 895 |
| | 900 | 905 |
| Gly Ser Val Gly Ala Gln Ala Leu Ala Leu Met Leu Ala Lys Asn Val | | 910 |
| | 915 | 920 |
| Met Leu Glu Glu Leu Cys Leu Glu Glu Asn His Leu Gln Asp Glu Gly | | 925 |
| | 930 | 935 |
| Val Cys Ser Leu Ala Glu Gly Leu Lys Lys Asn Ser Ser Leu Lys Ile | | 940 |
| 945 | 950 | 955 |
| | | 960 |

Leu Lys Leu Ser Asn Asn Cys Ile Thr Tyr Leu Gly Ala Glu Ala Leu
 965 970 975
 Leu Gln Ala Leu Glu Arg Asn Asp Thr Ile Leu Glu Val Trp Leu Arg
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cactgacctt gttctcccc ccaggttggtg aaatgtgtc gcaggaggct tttcaggcac 180
agaggagcca gctggtcgag ctgctggtct cagggtccct ggaaggcttc gagagtgtcc 240
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